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P.E.I. RESIDENTIAL FINANCING AND CONSTRUCTION FOLLOW-UP STUDY AND SURVEY: FINAL REPORT

P.E.I. RESIDENTIAL FINANCING AND CONSTRUCTION FOLLOW-UP STUDY AND SURVEY

FINAL REPORT

Submitted to:	Strategic Planning and Policy Development Division Canada Mortgage and Housing Corp.
CMHC File Ref:	6623-23
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Date:	February 28, 1990

This study was conducted by Andy Rowe - Consulting Economists with funding from Canada Mortgage and Housing Corporation. The analysis, interpretations and recommendations are those of the author and do not necessarily reflect the views of CMHC.

ABSTRACT

In 1982 CMHC financed a survey of new residential construction in Prince Edward Island. This survey produced the most comprehensive information available anywhere on self-help construction activities. It provided considerable detail on the construction tasks undertaken by households, and on the financing strategies they employed, and estimated that self-help accounts for a quarter of new residential construction in Canada. This follow-up survey provided the opportunity to examine the views of the households about their selected strategy, and to compare the provisioning strategies. Self-help dwellings were found to be more affordable and of similar quality to those produced by the construction industry. Households using self-help are more likely to maintain their dwellings themselves, appear to have higher maintenance standards and are very satisfied with their own self-help experience.

EXECUTIVE SUMMARY

Almost a quarter of new residential construction in Canada is produced through self-help means and in the Maritime Provinces and Newfoundland, over one half of new construction is through self-help. There are two categories of self-help: self-building where the household undertakes construction of the dwelling themselves usually with the assistance of sub-contractors, and self-promotion where the household acts as general contractor but does little actual construction work themselves. Self-building is four times as important as self-promotion in the Maritime Provinces. Self-help construction is a major source of employment for construction trades: although they only account for just less than a quarter of new construction, self-helpers spend twice as much on sub-contracts as does the residential construction industry.

In 1982 CMHC financed a survey of new residential construction in Prince Edward Island. This survey produced the most comprehensive information available anywhere on self-help construction activities. It identified the level of self-help activity for the first time in Canada, and provided considerable detail on the construction tasks undertaken by households, and on the financing strategies they employed. The decision by CMHC to fund this follow-up survey has provided the opportunity to obtain answers to a number of important questions about self-help construction.

One of the most important claims made for the advantages of self-help housing is that it increases the household's control over their accommodation. This is said to enhance the probability that the dwelling will be maintained and provide affordable, adequate and suitable accommodation over the longer term. This study confirms this proposition: self-help leads to higher maintenance standards and self-help households take a more active role in maintaining their dwellings. It also appears that there is little difference between the sectors in terms of the quality of their work in constructing the dwelling, and that self-help housing is more affordable and suits the housing requirements of the households as well as industry-produced dwellings. These observations have important policy implications since they confirm that self-help can be a useful contributor to housing provisioning, and can provide long-term benefits for the quality of the housing stock which might exceed those which can be obtained through industry provisioning.

This follow-up survey shows that households who have previous construction experience have a strong propensity to self-build, and that inexperienced self-builders rate their construction skills more highly than did households who self-provisioned or bought an industry house. This focuses attention upon these inexperienced self-builders as a potential class of new recruits to self-building. It was found that inexperienced self-help households who have not previously owned a dwelling are at a younger life cycle stage, contribute more sweat equity and build less expensive dwellings than do those households who have previously owned a dwelling. These strategies are analogous to those for the industry sector, younger first-time homeowners buy less expensive houses and the older households buy more expensive dwellings. The difference is that once a household is recruited to the self-help sector, it tends to stay. And since self-help provisioning is much more affordable than industry provisioning, it is selected by most of the younger first-time homeowners in locations such as P.E.I. where incomes are lower and unemployment rates are higher. This helps to account for the continuing importance of self-help.

It appears as if the relatively buoyant market conditions prevailing in P.E.I. during 1982-89 have contributed to the elimination of almost all of the affordability problems in the sample population. Self-help households benefitted most. They began the period with lower levels of indebtedness and lower gross debt service ratios, and experienced greater reductions in both over the buoyant period. This likely occurs because of the greater use of non-mortgage financing and the lower levels of initial indebtedness which are features of self-help. In terms of affordability then, self-help performs better than industry provisioning even during buoyant times. Self-help is also certain to perform better during hard times with the lower debt and repayment loads.

Households purchasing an industry-built dwelling have exhibited a far greater propensity to sell their dwelling than households who either self-built or self-promoted. There are few locational trends which cannot be attributed to the provisioning sector, and market hypotheses that households either sell to capture potential capital gains or are forced to sell through affordability problems are unsupported by the evidence. Some occupational groups (white collar, transportation and non-construction trades) show a higher propensity to sell, despite the fact that for both groups the prime means of provisioning was self-build. However household characteristics such as age, family size and income do not provide any insight into the reasons why these groups have this higher propensity. The differing rates might just be a reflection of greater attachment to or satisfaction with their dwellings by self-builders as a consequence of having had more confidence and control as a result of the provisioning process

There is a high level of satisfaction with self-help provisioning strategies, and a strong likelihood that most would use the same strategy again. Many households encountered some problems in the process of obtaining their dwelling and this might be a factor in the general recognition that they could have improved their performance. Training courses appear to be one option for this since there appears to be an openness to these, and the types of courses which households would take appear to be consistent with the types of activities they were engaged in. At the same time where self-help is an important form of housing provisioning, it might be useful for administrative agencies to assess the accessibility of their processes to individual households.

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1.0 INTRODUCTION[1]

Housing provision through self-help means is an important source of housing in Canada, representing about 23 per cent of the total value of new residential construction, a third of the value of new single detached dwellings, and about 41 per cent of recorded repair activity. In addition, self-help builders spend more on sub-contractors than do industry builders, despite the fact that industry production is about 4 times the level of self-help production. Indeed, the value of sub-contracts let by self-builders appears to be about double that awarded by industry builders (Rowe 1989b:7-10).

While the self-help efforts of households are known to be strongest in the least well off areas of Canada, most self-help households appear to be employed and few have special needs or are among client groups most likely to have housing need such as single parent households. Thus while unassisted self-help might not do much to reduce existing social housing need directly it likely reduces overall social housing need by providing affordable housing to those who might otherwise find themselves with affordability or adequacy problems. Without self-help provisioning, the number of households with housing need could be significantly greater (see Rowe 1989d).

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[1] Much of the credit for the success of this study should go to the three interviewers, Lorraine Begley, Irene Larkin and Helen Durie. Dianne Campbell conducted the searches of the assessment records and Richard Begley helped to arrange interviews. Jim Ramsey and his staff at the Real Property Assessment Division were helpful as always, as was the P.E.I. Housing Corporation and the Provincial office of CMHC. Thanks to Jan McClain for her valuable comments on the final draft. A special acknowledgement must be made to Sharon Matthews of CMHC National Office for her continuing support of self-help housing research, and for her valuable comments on this study in particular.

There are two important policy perspectives associated with self-help housing provision. The first is to ensure that the impact of policies on self-help provisioning is sufficiently understood so that this important source of housing is not unintentionally affected by housing and fiscal programmes. This is important if unintended and unexpected increases in social housing requirements are to be avoided. The second policy perspective is to assess self-help provisioning and policy options which would facilitate self-help as a means of meeting both social and market housing requirements.

Work on the first perspective has been initiated and the first contribution can be found in Rowe (1989a). In addition a study of the role of self-help in the housing of seniors began in 1990[2]. The principal focus of this project is the second perspective: an examination of the contribution of unassisted self-help housing and an assessment of self-help as a provisioning strategy.

1.1 Background To This Study

Through the External Research Program CMHC funded a survey of the first occupants of dwellings built in P.E.I. from 1978 to 1981. This survey of almost 11 per cent of new housing was conducted in 1982 and indicated that 83 per cent of new housing in P.E.I. was produced by self-help means (Rowe 1983)[3]. Subsequent research has indicated that the data from the P.E.I. survey (named the Prince Edward Island Residential Financing and Construction Survey or PEIRFCS) appears to be the most comprehensive contemporary data available anywhere[4] providing detailed information on the self-help construction process and financing arrangements used by responding households. This data allows comparisons of self-help strategies with the situations of households purchasing dwellings from the residential construction industry.

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[2] This study involves an examination of the various forms of self-help used to obtain 'retirement' housing and will initially focus on Ontario and Newfoundland households.

[3] These results were consistent with those produced by subsequent surveys in other areas. Bishop (1985) reports similar levels of self-help activity in Colchester County, Nova Scotia, and a survey conducted by the Small Town and Rural Studies Program at Mt. Allison University indicates similar levels of activity in all Atlantic communities with populations less than 20,000. Earlier work in Ontario (Fuoco 1984) showed that rural Portland Township had high levels of self-help, while the more urban Kingston

Since self-help strategies are now being recognised as important contributors to housing provision, the P.E.I. case study offers a unique opportunity to assess the opportunities and limitations of self-help, and the role that government might play in facilitating and/or assisting self-help.

In light of this, CMHC recently undertook a survey of lenders to better understand the extent and character of mortgage financing of self-help production (Ference and Associates 1989). The current work is also financed by CMHC. Its purpose is to use the 1982 PEIRFCS data base to further evaluate self-help versus industry strategies of housing provision, and to return to respondents from the 1982 survey to evaluate the options for housing provision and gain insights into longer term perspectives.

Township had quite low levels of self-help production. Anecdotal reports also indicate high levels of self-help activity in Saskatoon (Carter 1985), British Columbia (Skiburskis 1981), Quebec (Romana 1988), and in the urban areas of New Brunswick (DPA et al 1988).

[4] This impression has been fostered by a thorough search of the existing literature and discussions with leading contributors to the self-help housing literature (see Rowe forthcoming).

The terms of reference for the study are:

- systematically analyze existing data which was gathered in 1982 when the study "PEI Residential Financing Construction Survey" was undertaken
- undertake a follow-up survey of respondents of the 1982 study and systematically analyze results
- synthesize the 1982 results and the new survey results and prepare a detailed report which highlights the findings.

For all of the above tasks, the terms of reference instruct that the focus should be on differences among industry built, self-built and self-promoted strategies. These terms are defined in the following sub-section.

The project began in September, 1989 and the first phase of the report was completed in October. Interviews for the follow-up survey began in November and were largely completed by the end of that month, although a few additional interviews were completed in early January, 1990. The following sub-section summarises the principal findings of the original study and a parallel study from Nova Scotia, followed by a review of the work carried out in Phase 1 which examined housing need amongst the 1982 sample population.

1.2 Definition of Provisioning Strategies

The terminology for construction strategies used in this report is that which I have used elsewhere (for example, Rowe 1989a) and which appears to be the most widely used in the literature. That distinguishes between two self-help options: self-building and self-promotion. The meaning of the former is apparent and refers to households who build their own homes. However the application of the definition can cause confusion - it is used here in reference to households who undertake **responsibility** for all of the major phases of the project including planning, construction and financing. Other researchers have used the amount of 'sweat equity' or unpaid labour provided by the household as a means of applying self-build and distinguishing it from self-promoting and industry purchasing households. However the P.E.I. survey results indicate that this can lead to confusion.

Following the definition and operationalisation of self-build, self-promote is used to identify households who undertake responsibility for the planning and financing stages of the project, but who usually act as general contractor and hire a builder to construct the dwelling. CMHC has referred to this sector as 'self-contracting'.

There is one group identified as self-help according to this definition but who might be better included with industry production defined below. These are households employed in the construction industry who were almost twice as likely to be among the 1982 sample as their representation in the general population. Since the 1982 survey was proved to be very reliable in terms of all available comparisons (see Rowe 1983:36-48) it must be assumed that the high representation is real. It has been suggested that these households might well be building a dwelling every few years thereby transforming their frequently seasonally unemployed labour into wealth. If this is indeed the case with a significant number of these households, then it might be more reasonable to identify them as a second sector of industry production. However, until more is known about the strategies of these households they will not be classed separately.

Finally, industry built dwellings are those where a commercial firm such as a general contractor or property developer builds houses for sale. Up to the period when the original survey was conducted the client was not usually identified prior to the start of construction. This was referred to as 'spec building', a term is usually associated with large property developments; however it is not unusual for small contracting firms to 'spec build' from two to six dwellings a year. In recent years however 'pre-sales' have been common: that is where the contractor or developer contracts with the purchaser prior to starting construction.

1.3 Principal Findings in 1982 Study

The 1982 survey was a representative sample of households first occupying single detached dwellings started between 1978 and 1981. The survey was conducted in 1982 and about 11% of all households in the survey population were interviewed. Bishop(1985) applied a similar methodology in Colchester County, Nova Scotia, and her results are also reported in this sub-section.

There were a number of similarities between the first occupants of industry built, self-promoted, and self-built dwellings. The dwellings themselves were quite similar in terms of size and number of rooms and the household heads are about the same age.

There were also very significant differences among the sectors - the costs of producing by self-build were far lower and this was principally due to the unpaid labour or 'sweat equity' provided by the households themselves. As a consequence, self-built dwellings took longer but were still normally started and occupied during one building season. All of the dwellings were of wood frame construction, and, when finished, appeared to be at least as good quality as those produced by the residential construction industry.

Self-promoting households were older than industry or self-building households, however self-building also had many older households with 5.7 percent of self-building households in PEI (Rowe 1983:57) and 15 percent of self-building households in Colchester County (Bishop 1985:34) either retired or about to retire. Self-builders included some quite young heads of households , for example, 7.5 percent in PEI (Rowe 1983:53) and 9.1 percent in Colchester County (Bishop 1985:33) were under 25. Thus self-building appears to be physically possible for most households - the physical and skill requirements of the undertaking did not restrict participation of particular age or skill groups.

However, self-building did not appear to give the unemployed an avenue to homeownership. Although unemployment at the time of the survey averaged over 12 percent in both PEI and Colchester County, the unemployment rate among self-builders in PEI was about 2 percent (Rowe 1983:57) and in Colchester County 4.4 percent (Bishop 1985:34). This was probably because it is usually necessary to have an income in order to be able to make the necessary payments for land, materials and other inputs to the construction process. In addition, although 7.8 percent of PEI households and 7.5 percent of Nova Scotia households were headed by a single parent, no single-parent households appeared as occupants of new accommodation in either PEI or Colchester County during the study period (Rowe 1983:52, Bishop 1985:32).

Whilst about half of the self-builders in PEI used a mortgage as the principal source of financing for their dwelling, Colchester County self-builders were far less likely to use mortgage financing: 72.1 percent of Colchester County 1981-83 starts were non-mortgage financed (Bishop 1985:69). The main elements in non-mortgage financing in both Colchester County and PEI were savings, loans and the sale of an asset such as land or a house. Mortgage financing tended to be affected by local conditions. For example, in PEI it appeared that an important reason for the greater use of mortgage financing was that mortgage lenders were not as reluctant to lend and actively marketed mortgage loans in contrast to lenders in rural areas elsewhere in the region. One reason for this might have been that there were fewer lending alternatives for the financial institutions in PEI while in the other provinces there are significant metropolitan mortgage markets with high levels of activity by the residential construction industry. In non-metropolitan Newfoundland, the conditions of settlement meant that land was often passed on without probate or record, thus making mortgage lending difficult (Rowe 1981). The substantial differences in financing strategies adopted by self-builders in these apparently similar locations is but one illustration of the amount of variability there can be in the self-build sector, and how influential contingent factors such as alternatives for financial institutions (PEI) or the quality of land titles (Newfoundland) can be.

Self-builders often had a more secure hold on their dwelling, not only because they were far less likely to use debt financing but also with the lower total costs to be financed they were able to indenture a lower proportion of the value of their dwelling. This led to lower levels of gross debt servicing for total debt financing for both self-builders and self-promoters, and the higher proportion of dwellings unencumbered by debt financing. This provides a plausible explanation for the greater resilience of self-building during the high interest rate period of 1980-81 when industry output fell dramatically compared to self-building.

Self-building presents opportunities for reducing the costs of a new dwelling, opportunities which are not available with industry production. These cost reductions are an important factor in the housing advantage of many Atlantic Canadian households, despite their lower incomes and frequently higher construction costs. It is thus useful to consider the barriers inhibiting all households from meeting their housing needs through this means.

Self-building as a form of production requires capital outlays for land, foundations, and materials, even in the classic situation where the household provides all of the labour itself. Most self-building households in PEI provided between a quarter and a half of all the required labour. In order to meet the capital requirement however, self-builders must either have access to debt financing, or have previously accrued capital in some form. Debt financing is more difficult for self-builders than for purchasers of completed dwellings because of the lending preferences of the financial institutions (Rowe 1989a Ference and Assoc. 1989). However, in order to obtain debt financing, or to accrue capital in advance, potential self-builders must usually have had an income, and normally this will have been earned income. Wealth based income is unusual among self-builders and transfer income levels are too low for the required level of accumulation. This requirement is reflected in the occupational structure of households.

The financial barrier appears to be a fundamental restriction facing self-building. It makes it unlikely that many of the households who usually have difficulty participating in housing markets (eg. unemployed, single parent households, and the homeless) will be able to find a solution in self-building without assistance from relatives or the state. In addition to the financial barrier, the skill and time requirements of self-building will mitigate against some households building their own dwelling. Finally, the post-war boom and active regional fiscal policies during the 1960's and 1970's facilitated household accumulation for self-building through higher employment and income levels. In the current economic situation many more households will probably find the barriers to self-building more difficult to overcome.

Harris (1987) has observed that in a much earlier period, self-building in Toronto was rare inside the municipal boundaries where building regulations required stone or brick construction, whereas outside of Toronto in the newer subdivisions, self-building flourished. Today in Canada there appears to be a similar association between self-building and municipal regulations, however it is very possible that this association is more apparent than real. For example, the requirement that only 'ticketed' (municipally approved) electricians and plumbers install services is often circumvented in all three forms of production (industry, self-provision and self-help) by having 'untickited' individuals (including self-builders) complete most of the work with a modest payment to the ticketed person to sign the documents and complete the final hook-up. While it is undoubtably true that the vigorous enforcement of regulations will inhibit self-building it is not clear that the mere existence of regulations has a significant impact.

From this brief review it can be seen that although the benefits of self-building are considerable, they are not available to all households.

1.4 Findings From Phase 1

The first task in this follow-up study was a reexamination of the PEIRFCS data to evaluate the level of housing need existing amongst the sample population.

Almost 10% of the households in the 1982 survey had affordability problems prior to occupying their new home and almost half (9 of 23) of these households no longer had an affordability problem in their new home. Those who managed to avoid mortgage financing clearly also eliminated their affordability problems in the process. Self-building alone was not a key to the elimination of affordability problems since 80 per cent of those who self-built but who used mortgage financing had not escaped their affordability problems.

In addition the acquisition of a new dwelling created affordability problems for an additional 30 households (13 per cent). Of these 23 used self-help means (18 self-built) and 7 purchased an industry dwelling: a similar distribution to overall construction strategies. The distribution of financing strategies differed slightly from the general population: 21 (70 per cent) of the new affordability problems used mortgage financing - a marginally higher incidence of mortgage financing as compared to the general population.

Households with prior affordability problems occupied smaller and less expensive dwellings in comparison to households who did not previously have an affordability problem: however, they also contributed somewhat lower levels of sweat equity. Only 4 (18.2%) of the dwellings purchased or built by households with prior affordability problems were started during the 1980-81 period of high interest rates and these were all in 1980. This contrasts to 54 households (25.9%) without a prior affordability problem who built during the 1980-81 period.

This is likely associated with the more frequent use of mortgage financing which is itself associated with lower levels of sweat equity. In this sense the lower levels of sweat equity for households with prior affordability problems probably arise because these households are more likely to use mortgage financing: and it is very possible that the selection of this financing option was a matter of necessity due to lower incomes. This may have something to do with the accumulation of wealth since only 5 of 18 who still had affordability problems were over the age of 35, while 3 of 5 who eliminated their affordability problems were over 35 years of age. Prior accumulation of wealth has been shown to reduce the need for mortgage financing (Steele 1988). This would be consistent with the observation that households who still had an affordability problem occupied smaller and less expensive dwellings.

Households with a prior affordability problem were no more likely to occupy their new dwelling before services such as plumbing and electricity were installed, or before the building reached a reasonable level of completion. Not all households with prior affordability problems had eliminated the deficiencies by the time they were interviewed, however the level of deficiency was lower than for those households without a prior affordability problem.

It appears that households in need achieved lower costs by reducing the size of the dwelling, not by providing higher levels of sweat equity or by other means such as obtaining less expensive land. We have already seen that this strategy did little to eliminate the affordability problem: it is also a possibility that the cost savings which are likely to have been necessary may lead to future adequacy or suitability problems.

Households with a prior affordability problem appear to still have an affordability problem in their new residence regardless of the construction option they employ so long as they use mortgages as their financing option. However, by occupying a somewhat smaller dwelling, and possibly through other cost saving means as well, households who previously had an affordability problem reduce the total costs of their new dwelling

Unassisted self-help does not appear to significantly reduce affordability problems, however it does offer the opportunity to reduce costs. Thus if self-help strategies are efficiently applied, overall housing need can be reduced through the production of affordable, quality housing. Self-help is used as a construction strategy by older households, many of whom provided a significant amount of sweat equity for the project. This strongly suggests that self-help is a viable option for older households. It appears that many self-help households encounter unexpected costs due to problems in the planning and management of the project, and that this is the likely reason for the strong association between affordability problems and mortgage financing strategies which has been identified in this section.

1.5 Outline of this Report

The next section of this report discusses some of the principal issues in self-help as a means of housing provision and defines the categories of self-help housing. This is followed by a comparison of the strategies[5] used by different groups. Section 3 describes the methodology of the follow-up survey and evaluates the survey itself.

A third of the respondents in the 1982 survey have since sold their dwellings. Section 4 uses the 1982 data to describe some of the changes in the survey population which might account for this level of residential mobility. This is followed by three sections which address the adequacy of the dwellings built in 1982: section 5 which deals with the choice of provisioning sector by respondents including an assessment of construction skills, section 6 compares the quality of the dwellings built by the different sectors and section 7 provides an examination of the maintenance and repair practices of households. Section 8 looks at the current affordability of the dwellings, section 9 at suitability and section 10 reports on the reflections of the respondents upon their experience. Conclusions and recommendations are presented in section 11.

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[5] This will include kit and manufactured housing which was used by a few households responding to the 1982 survey.

2.0 ISSUES IN SELF-HELP HOUSING

There are a number of issues concerned with self-help housing provision the answers to which could influence the attitudes of government and other agencies towards the activity. These issues are related to the quality of the construction, the on-going benefits of self-help both in terms of the housing situation of the household and in terms of the long term maintenance of the housing stock, and the extent to which special skills and knowledge are required to participate in self-help. These issues are briefly discussed in the sub-section which follows.

2.1 Issues in Self-Help Housing

One of the most important claims made for the advantages of self-help housing is that it increases the household's control[6] over their accommodation. This is said to enhance the probability that the dwelling will be maintained and provide adequate and suitable accommodation over the longer term. At the same time, self-help housing is usually less expensive than industry-produced housing, and this should lead to improved affordability. Thus the major claims made for self-help housing are that, for the individual household, it is more likely to be affordable, suitable and adequate (see Turner 1982:104-111).

Offsetting this are concerns that not all households are suited to self-help, for example, single parent households and seniors where the time and physical requirements may exceed the resources of the household. In addition, there is concern that self-help by unsuitable households might lead to increased costs (reduced affordability), or poorer quality housing (reduced suitability or adequacy). While this does not contradict the **potential advantages** of self-help, there is concern that self-help is only suited to a limited number of circumstances.

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[6] This is often referred to as "pride of ownership", "empowerment" or "confidence".

A second set of closely related issues is concerned with the physical structure itself. Proponents of self-help have argued that the household has a vested interest in producing a quality dwelling because they are not only going to live in it, but also the dwelling represents such an important element in their household's wealth that they will ensure that it is of good quality.

While acknowledging these vested interests, others feel that the construction process is highly skilled and that these skills are not accessible to individual households[7]. Consequently their product cannot match that of the residential building industry in terms of quality. At times those concerned about the ability of individual households have had their concerns reinforced by the visibility of self-help failures such as families living in incomplete attempts at self-help.

Proponents also argue that an important element of the greater control that households have over their accommodation are the gains in knowledge and skill obtained through self-help provisioning. Since the ongoing work of maintaining, repairing and modifying dwellings greatly exceeds the amount of work required to originally produce the dwelling, the enhancement in skills, knowledge and confidence will result in a more affordable and appropriately maintained dwelling over time.

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[7] These views are being strongly expressed by inspectors interviewed as part of a self-help provisioning project being undertaken by Jan McClain at the University of Western Ontario.

Finally, there is the issue of whether self-help is only a sign of industry failure, and that the appropriate public response in such situations would be to assist the industry. I have argued that self-help is still the most important form of new production where it is most difficult for the industry to produce profitably (1989a). However, this is quite different from saying that self-help only occurs where the industry has failed: self-help also accounts for a considerable amount of new construction and, more importantly, renovation and repair in markets such as Ontario where the industry is clearly viable. In addition, it is clear from the 1982 study that self-help production is more affordable. Evidence from this follow-up survey provides information which indicates that self-help is an effective sector of housing provision.

So long as self-help was perceived to occur only in isolated areas and even there, on a small scale, those who were concerned about the appropriateness of self-help could assume that it was generally carried out by households whose unique characteristics would lead to successful outcomes.

Now that it has been demonstrated that self-help is much more widespread and must be considered as an important sector of housing provision in Canada, these concerns about the quality of self-help production must be addressed.

Consequently the follow-up survey obtained information on the following topics:

- factors influencing the selection of a provisioning sector
- quality of the dwellings
- skill levels and how skills were obtained
- maintenance attitudes and practices
- current affordability and suitability
- views in retrospect of how they would do the project now and how they might have been assisted

This information supplements the data from the 1982 study and is used in the report which follows to assess, so far as possible, each of the issues discussed above. There are thus three categories or construction strategies which can be used by households, the self-help strategies of self-building and self-promotion, and the purchase of a dwelling built by the residential construction industry.

3.0 FOLLOW-UP SURVEY: METHODOLOGY AND RESULTS

Interviewing for the follow-up survey began in the second week of November, 1989. The sudden and early onset of severe winter weather in that month delayed the interview process so that about 14 percent of the possible interviews remained undone prior to Christmas. This necessitated additional interviews in early January which gained a further 21 completed interviews bringing the total interviews completed to 136, or about half of the original survey population.

The resulting data appears representative of the 1982 sample. There are an unexpectedly high number of households who have moved since 1982 (95 or 33% of the 1982 sample).

The process used to list respondents for the 1989 survey is described in the following sub-section. This is followed by a description of the interview results and an evaluation of these.

3.1 Listing of Respondents

The universe for the 1982 survey consisted of all building permits issued between the years 1978 and 1981. 2,679 valid[8] permits were issued. The building permits included information which was used to stratify the universe by year, county and community type. There are 3 counties in P.E.I. and 5 types of communities were identified: urban, suburban, town, village and rural.

A 15% stratified sample was drawn in an effort to obtain valid and willing respondents representing 10% of the universe.[9] Valid respondents were defined as the owners and first occupants of a single detached dwelling for which a building permit had been issued between the years 1978 and 1981. 286 interviews were actually completed in 1982 representing 10.6% of the universe. The survey data and supporting documentation was lodged with CMHC in 1984.

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[8] Rowe (1983:22-29) describes the universe.

[9] The sample design is described in Rowe (1983:30-32).

The objective of the current survey was to follow-up 1982 respondents to evaluate their housing situation 6 to 10 years following original occupancy of their new dwelling, and to investigate various options which could make this form of housing provisioning more generally accessible.

The universe for the follow-up survey thus consists of respondents to the 1982 survey. However a number of these have sold or otherwise disposed of their dwelling. The first function of the listing process for the follow-up survey was thus to determine which of the 1982 respondents still owned their original dwelling.

Property numbers were available for 240 of the 286 original respondents. In P.E.I. property numbers are unique identifiers assigned to every individual property. These property numbers are the principal reference used by the Real Property Assessment Division of the P.E.I. Department of Finance, consequently a current record is maintained of the owners address and the details of the property including assessments of the land, residences and outbuildings. Microfiches of the 1988 assessment were obtained and from these current addresses were obtained from the 1988 assessment records for the 240 original respondents where property numbers existed.

The remaining 46 respondents did not have property numbers associated with the building permit. Many of these respondents had purchased a dwelling from a developer. In that situation the property number on the building permit had often been issued for the undivided parcel of land which was being developed. At a later stage the parcel was divided and the individual building lots were assigned their own unique property numbers, however this assignment was not apparent from the original building permit. Consequently it was necessary to use the alpha assessment roles to obtain a property number for the 1989 listing. Once a number had been obtained the procedure was similar to that described above for cases where the property number was more readily available. As always, the Real Property Assessment Division were most cooperative.

213 of the original 286 respondents were found to still own their dwelling as of the end of 1988. These comprised the sample population. A further 22 were found to have registered changes in ownership in early 1989.

3.2 Interview Methodology and Results

In the first week of November introductory letters were sent to those who still owned the same dwelling that they had in 1982, and a face-to-face interview process was initiated about one week after the letters were mailed. The interviewers first telephoned the respondents to arrange the interview, and then conducted the interview in the respondents' dwelling. The interview usually lasted 45 minutes and, when light conditions permitted, the interviewers photographed the exterior of the dwelling.

A training session was held with the two interviewers. The principal researcher conducted this session in Charlottetown. Both were experienced interviewers and one had worked on the 1982 survey. A third experienced interviewer was hired to complete the post-New Year interviews since the original two interviewers were no longer available. This interviewer was also trained before beginning work.

Of the 191 who still owned their dwelling in 1989, 136 were interviewed. 13 could not be contacted because their telephone numbers were not available, principally due to a change in the P.E.I. telephone exchanges since 1982[10]. In addition 40 refused to be interviewed, usually because of personal circumstances such as marital break-up or death of a spouse.

Because interviewers often had to obtain information from area residents as to the exact location of dwellings they were able to anticipate potentially threatening circumstances. Based on local information the interviewers decided not to interview two of the respondents with whom interviews had been arranged.

Over 76% of the eligible respondents were successfully interviewed in the follow-up survey as summarised in Table 3.2.1.

TABLE 3.2.1
STATUS OF 1982 RESPONDENTS IN 1989 FOLLOW-UP SURVEY

Number of Respondents in 1982	286	
Less - Number Moved Since 1982	95	
- Number Now Without Telephone	13	
Equals Maximum Possible in 1989	178	
Number of Interviews in 1989 (%)	136	(76.4)

The number of movers amongst the sample was surprisingly high. In order to examine these households in more detail it was decided to use the P.E.I. Real Property Assessment records to attempt to determine when the property was sold, what the assessed value of the property was at the time of sale. Where possible it was also determined whether the original owner of the dwelling (who would have been interviewed in 1982) had acquired another dwelling at about the same time of the sale of the original dwelling. All of the property records for these 'moved' dwellings were examined and sale date and assessed values were recorded for each.

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[10] If the number used in the 1982 survey was not valid, the interviewers consulted the telephone directory and, if a valid number was still not available, they contacted directory inquiries. Thus the households who could not be contacted likely now have unlisted numbers, have had their numbers disconnected, are in the process of moving or are renting their dwelling.

3.3 Assessment of the Follow-Up Survey

It is important that the 1989 follow-up is representative of the 1982 population. In this sub-section a number of key variables are selected to assess the distribution of the 1989 sample. These are the key locational variables: community size and county, year of start, and the main descriptive variables: production sector, and the main source of financing.

TABLE 3.3.1

INTERVIEW STATUS BY TYPE OF COMMUNITY

```
Status

Frequency |       Community Type
Percent   |
Row Pct   |
Col Pct   |urban    |town/vil|rural   | Total
----------+---------+--------+--------+
completed |      42 |     14 |     80 |   136
          |   14.69 |   4.90 |  27.97 | 47.55
          |   30.88 |  10.29 |  58.82 |
          |   41.58 |  58.33 |  49.69 |
----------+---------+--------+--------+
moved     |      39 |      7 |     49 |    95
          |   13.64 |   2.45 |  17.13 | 33.22
          |   41.05 |   7.37 |  51.58 |
          |   38.61 |  29.17 |  30.43 |
----------+---------+--------+--------+
no phone  |       7 |      0 |      6 |    13
          |    2.45 |   0.00 |   2.10 |  4.55
          |   53.85 |   0.00 |  46.15 |
          |    6.93 |   0.00 |   3.73 |
----------+---------+--------+--------+
refused   |      13 |      3 |     24 |    40
          |    4.55 |   1.05 |   8.39 | 13.99
          |   32.50 |   7.50 |  60.00 |
          |   12.87 |  12.50 |  14.91 |
----------+---------+--------+--------+
other     |       0 |      0 |      2 |     2
          |    0.00 |   0.00 |   0.70 |  0.70
          |    0.00 |   0.00 | 100.00 |
          |    0.00 |   0.00 |   1.24 |
----------+---------+--------+--------+
Total          101       24      161     286
             35.31     8.39    56.29  100.00
```

Urban respondents were slightly less well represented in the follow-up survey as compared to the original survey, and more likely to have moved or to no longer have a listed telephone number. Thus the slight skewing in the follow-up sample is a result of changes in the original population and does not arise from uneven application of the follow-up survey. The distributions by area are presented in Table 3.3.1 above.

The distributions by county are almost identical for the original and follow-up surveys. These are shown in Table 3.3.2 below.

Similarly, the annual distribution of the completed sample in the follow-up survey is almost identical to the 1982 survey. Thus the follow-up survey is a close representation of the original 1982 survey with respect to the main geographic and temporal descriptors.

TABLE 3.3.2

INTERVIEW STATUS BY COUNTY

Status

Frequency Percent Row Pct Col Pct	County			
	Queen's	Prince	King's	Total
completed	76	45	15	136
	26.57	15.73	5.24	47.55
	55.88	33.09	11.03	
	48.41	46.39	46.88	
moved	56	29	10	95
	19.58	10.14	3.50	33.22
	58.95	30.53	10.53	
	35.67	29.90	31.25	
no phone	5	7	1	13
	1.75	2.45	0.35	4.55
	38.46	53.85	7.69	
	3.18	7.22	3.12	
refused	19	15	6	40
	6.64	5.24	2.10	13.99
	47.50	37.50	15.00	
	12.10	15.46	18.75	
other	1	1	0	2
	0.35	0.35	0.00	0.70
	50.00	50.00	0.00	
	0.64	1.03	0.00	
Total	157	97	32	286
	54.90	33.92	11.19	100.00

There are important differences between the 1982 and the follow-up samples with respect to the provisioning sector used by respondents: the follow-up sample has a relatively larger proportion of self-builders and a relatively lower proportion of industry-provisioning compared to the original survey[11].

TABLE 3.3.3

INTERVIEW STATUS BY CONSTRUCTION SECTOR

```
Status

Frequency |    Construction Sector
Percent   |
Row Pct   |
Col Pct   |self-bui|self-pro|industry|
          |ld      |v       |        |  Total
----------+--------+--------+--------+
completed |    107 |     17 |     12 |    136
          |  37.41 |   5.94 |   4.20 |  47.55
          |  78.68 |  12.50 |   8.82 |
          |  54.59 |  40.48 |  25.00 |
----------+--------+--------+--------+
moved     |     53 |     14 |     28 |     95
          |  18.53 |   4.90 |   9.79 |  33.22
          |  55.79 |  14.74 |  29.47 |
          |  27.04 |  33.33 |  58.33 |
----------+--------+--------+--------+
no phone  |      8 |      2 |      3 |     13
          |   2.80 |   0.70 |   1.05 |   4.55
          |  61.54 |  15.38 |  23.08 |
          |   4.08 |   4.76 |   6.25 |
----------+--------+--------+--------+
refused   |     27 |      8 |      5 |     40
          |   9.44 |   2.80 |   1.75 |  13.99
          |  67.50 |  20.00 |  12.50 |
          |  13.78 |  19.05 |  10.42 |
----------+--------+--------+--------+
other     |      1 |      1 |      0 |      2
          |   0.35 |   0.35 |   0.00 |   0.70
          |  50.00 |  50.00 |   0.00 |
          |   0.51 |   2.38 |   0.00 |
----------+--------+--------+--------+
Total          196       42       48      286
             68.53    14.69    16.78   100.00
```

However this is attributable to the higher incidence of industry households amongst those who have sold their dwellings since 1982. Thus, as with the distribution by community size, it arises from changes in the sample population, and not from the application of the follow-up survey. Indeed, since it is known from the 1982 survey that industry-provisioning is most common in urban areas, then the greater propensity of industry-provisioning to have been sold is consistent with the decreased number of industry dwellings amongst those visited in the follow-up survey. These results are presented in Table 3.3.3 above.

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[11] It might be argued that the 1989 sample should be weighted by the distribution of the 1982 sample. While this would be true if we were using the 1989 sample for population estimates it is not necessary for the purposive applications here.

The principal reason for the higher relative distribution of self-builders is because industry sector households have shown a very high propensity to move. Self-builders are the least mobile and self-promoting households appear to as likely to be mobile or be interviewed as they are likely to be in the total sample population. This is discussed further in the following section.

Thus for the main descriptors of the 1982 sample the mild skewing in the follow-up sample can be attributed to the greater propensity to move by households purchasing an industry-built dwelling. Since this reflects changes in the sample population, and since for all other descriptors the follow-up is almost identical to the original sample, then the follow-up results can be taken to be representative of the 1982 sample.

3.4 Summary

The overall evaluation of the interview process at the time of this report is that there are no apparent problems with the level or distribution of completed interviews. The high level of residential mobility warrants further examination and this is carried out in the following section.

4.0 RESIDENTIAL MOBILITY IN THE SURVEY POPULATION

There are a host of economic factors which have affected the P.E.I. housing market since the original survey was completed in 1982. The net impact has been a relative boom in housing values and an acceleration of sales and new construction. While this boom has not approached the scale of Toronto or Vancouver, for example, it has still had a substantial impact on the provincial housing market, and in particular, the markets associated with the major employment centres in Charlottetown and Summerside.

These market conditions may account for the apparently[12] high level of sales of dwellings in the survey population: a third of the dwellings had been sold by 1989. Table 4.0.1 shows interview status by construction sector. It can be seen that households who purchased a dwelling from the residential construction industry were far more likely to have sold their dwelling than self-builders, and that self-provisioning households fell between the other two sectors.[13] To consider sales by construction sector we should look at the row percentages in the 'sold' column in Table 4.0.1 where it can be seen that **industry produced houses were about twice as likely to have been sold by 1989 than self-help houses.** The results presented in the following sections of this study show the quality of self-help production to be indistinguishable from industry production. Thus it is unlikely that quality was a factor in these differing rates.

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[12] I use the adjective 'apparently' because I have not been able to obtain a comparable estimate for other housing markets.

[13] In this section of the report, refusals, households who appeared to still occupy their dwelling but who do not have a listed phone number, and those who were not interviewed for other reasons are aggregated as 'other'. It can reasonably be assumed that most of these houses have not been sold since they were still listed in the 1988 Assessment roles as being owned by the original owner: thus any sales would have had to occur in 1989.

```
                 TABLE 4.0.1

ORGANISATION OF CONSTRUCTION BY 1989 STATUS

Construction
Sector

Frequency   |    Status In 1989
Percent     |
Row Pct     |
Col Pct     |still   |sold    |other   |
            |own     |        |        |  Total
------------+--------+--------+--------+
self-build  |    107 |     53 |     36 |    196
            |  37.41 |  18.53 |  12.59 |  68.53
            |  54.59 |  27.04 |  18.37 |
            |  78.68 |  55.79 |  65.45 |
------------+--------+--------+--------+
self-provide|     17 |     14 |     11 |     42
            |   5.94 |   4.90 |   3.85 |  14.69
            |  40.48 |  33.33 |  26.19 |
            |  12.50 |  14.74 |  20.00 |
------------+--------+--------+--------+
industry    |     12 |     28 |      8 |     48
            |   4.20 |   9.79 |   2.80 |  16.78
            |  25.00 |  58.33 |  16.67 |
            |   8.82 |  29.47 |  14.55 |
------------+--------+--------+--------+
Total            136       95       55      286
               47.55    33.22    19.23   100.00
```

This is a potentially significant observation which deserves further attention, and to which the remainder of this section is directed. The following sub-sections examine this by looking at a number of characteristics of the dwellings and the households as they were observed in the original survey in 1982. Unfortunately the 1989 data cannot be used for this since, obviously, 'sold' and 'other' dwellings only contain missing values for all of the survey variables.

4.1 Geographic Differences Between Sold and Still Owned Dwellings

There are geographic differences between the 'sold' and 'still owned' categories, however these are consistent with the known differences between self-help and industry production: industry production is concentrated in the urban areas whilst self-help occurs in both rural and urban areas. About 38% of urban area dwellings had been sold by 1989, while about 30% of dwellings located in rural areas had been sold by that time. Similarly, sales were marginally more frequent in Queen's County (containing Charlottetown) than in the other counties. As has been argued elsewhere with respect to the geographic differences noted in the 1982 survey, these differences are attributable to differences in construction sector: the geographic differences do not carry much explanatory value on their own (see Rowe 1989b).

There are still, however, two notable points which can be made about the geographic distribution of dwellings sales. The first is that while in absolute terms the number is small, all of the industry construction built in towns and villages[14] had been sold by 1989. There were 6 such dwellings in the sample, or an estimated 45 for P.E.I. as a whole for the 1978-81 construction period. Because of the small number this is treated as an interesting observation which could be investigated further with the available data.

The second interesting observation is also associated with the towns and villages in P.E.I. where very little in the way of new construction occurred in the 1978-81 period. It is thus interesting to note that half of the dwellings built during that period in towns had been sold, whilst less than 20% of the dwellings built in villages in the same period had been sold. These two observations imply that the housing markets in the two different sized communities have had different experiences in the ensuing 7 years. Once again, further investigation of this observation cannot be justified at this stage given the small number of cases involved.

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[14] Towns and villages are incorporated areas with populations less than 500. The distinction between the two is that villages do not provide any services, while limited services are available in towns. Naturally towns are larger. This is discussed in the 1983 report.

4.2 Differences in the Financing of Sold and Still Owned Dwellings

The differences in the original financing of dwellings sold up to 1989, or still owned at that time, are also consistent with the patterns attributable to the sector of construction. Dwellings principally financed by a mortgage from a bank or trust company were most likely to have been sold, and this was the most common form of original financing used by about 83% of industry production. Savings were used by 15% of self-builders, and only 6% of the dwellings sold by 1989 had originally been financed through savings as principal means. Loans and asset sales were the other principal means of original financing in 1982 and the probability of each being in the sold sector corresponds roughly to their use by industry and self-builders in 1982.

TABLE 4.2.1

MAIN SOURCE OF FINANCING BY STATUS IN 1989

Category		Principal Source of Financing					
		inst mort	cu mort	loan	asset sale	save	other
All 1982 Respondents							
Self-Build	194	44.3	13.9	6.8	12.9	15.5	3.6
Self-Provi	41	61.0	2.4	4.9	24.4	0.0	7.3
Industry	48	83.3	0.0	2.1	14.6	0.0	0.0
Total	283	53.4	9.9	7.8	14.9	10.6	3.5
Still Owned in 1989							
Self-Build	107	43.9	15.0	7.5	13.1	16.8	3.7
Self-Provi	17	64.7	0.0	0.0	23.5	0.0	11.8
Industry	12	91.7	0.0	0.0	8.3	0.0	0.0
Total	136	50.7	11.8	5.9	14.0	13.2	4.4
Sold By 1989							
Self-Build	52	48.1	9.6	11.5	13.5	11.5	5.8
Self-Provi	14	57.1	7.1	7.1	21.4	0.0	7.1
Industry	28	82.1	0.0	3.6	14.3	0.0	0.0
Total	94	59.6	6.4	8.5	14.9	6.4	4.3

In addition to households moving for family reasons there are **two important economic possibilities** which can be derived from the information in Table 4.2.1 and in Table 4.2.2 below: **households might sell to take advantage of capital gains offered by the strong market conditions, or they might sell because they are unable to afford their dwelling**. For example, it is known from the 1982 data that self-built dwellings are considerably more affordable than are industry dwellings because the total costs are lower and, consequently, debt financing is less frequently used and when used accounts for a lower proportion of the total costs of the dwelling. Consequently, if industry-produced dwellings are more frequently sold, then this might be a reflection of their greater probability to present affordability problems which are often associated with mortgage financing. On the other hand, industry-produced dwellings were concentrated in the urban areas where the opportunities for capital gains were strongest: thus the higher level of industry sales might reflect this opportunity for capital gain.

The first indications of the validity of these two propositions can be found in Table 4.2.2 where the gross debt service (GDS) ratio for all payments for the purchase of the dwelling do show a marginally higher level for sold dwellings than for those still occupied. The difference between the costs of the dwelling and the expected selling price (first two groups in Table 4.2.2) can be seen to be more pessimistic for households who sold industry-produced houses.

TABLE 4.2.2

SELECTED MARKET VARIABLES FOR OWNERSHIP STATUS AND CONSTRUCTION SECTOR

1989 Follow-Up

Variable	Construction Sector	Still Own	Sold
OCCUCOST	DWELLING+LAND COST TO OCCUPANCY (1978-81, $)		
	Self-Build	38958.33	55906.98
	Self-Provision	50266.67	54461.54
	Industry	40500.00	57200.00
DWELLVAL	VALUE-FAIR PRICE (1982, $)		
	Self-Build	55558.82	62083.33
	Self-Provision	61466.67	64285.71
	Industry	64090.91	54760.00
HHYRCON	GROSS INCOME-HHLD-YR CONSTRUCTION (1978-81, $)		
	Self-Build	21293.07	20051.02
	Self-Provision	21233.33	20871.43
	Industry	25672.73	24480.00
HHYRINT	GROSS INCOME-HHLD-YR INTERVIEW (1982, $)		
	Self-Build	25767.65	23948.00
	Self-Provision	27153.33	25600.00
	Industry	31309.09	32161.54
GDS2	GROSS DEBT SERVICE ALL PAYMENTS FOR PURCHASE (1982, %)		
	Self-Build	0.1739307	0.1904094
	Self-Provision	0.1920740	0.2080896
	Industry	0.2355883	0.2398755

This first-cut view is contradicted by a more detailed examination of the two propositions. Unfortunately, this has to be done with less than optimal data because we do not have post-1982 information from those who sold their dwelling and there is no information in the 1982 data about the plans of households.

Table 4.2.3 presents information which indicates that, while neither hypothesis can be statistically rejected, it would also be very difficult to put much credence in either hypothesis. Details of the calculations are presented in the notes to Table 4.2.3. A norm value was established as the price which could be expected if the dwelling was sold in 1988. This norm value is based upon the Royal LePage estimates that a single detached bungalow would sell in an urban area in P.E.I. for $88,000 in 1988 (Royal LePage 1988:6). This was adjusted to reflect differences by county and community size using the respondents estimates of market value as obtained in the 1989 follow-up[15].

The capital gains which could have been obtained were greater for households who did not sell their dwelling, and this is true whichever capital gain estimate is used. Thus it is unlikely that many dwellings were sold in an effort to capture a potential capital gain. On the other hand, the GDS ratios are higher for those households who sold a dwelling, but a mean value for 1982 of 0.21 is hardly sufficiently high to expect that many households would find themselves unable to afford their dwelling: particularly if we recall that interest rates would likely have been much higher in 1982, and that this GDS ratio includes all sources of debt for the dwelling, not just the principal source. Thus it is also unlikely that many of the sales prior to 1989 were forced by affordability problems.

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[15] These values were then compared with the reported values of new dwellings mortgage financed under the P.E.I. Rural Mortgage Lending Support Program. The norm values appeared consistent with the program values.

TABLE 4.2.3

POTENTIAL CAPITAL GAINS AND GDS RATIOS

1989 Status	Potential Capital Gain Real 1988[1]	 Perceived 1988[2]	 1982[3]	GDS 1982[4]
Still Own Dwelling	19190	6331	13524	0.18
Sold Dwelling	2378	3882	-245	0.21
Other	23817	15303	6750	0.19

[1] Potential Real Capital Gain is calculated as the difference between the norm value for 1988 and the total construction and land costs.
[2] Potential Perceived Capital Gain is calculated as the difference between the norm value for 1988 and the perceived value in 1982.
[3] Potential Perceived Capital Gain in 1982 is the difference between perceived value in 1982 and total construction and land costs.
[4] GDS ratio is for all debts incurred in acquiring the dwelling.

While there are some differences between the financing and costs of dwellings depending upon whether they had been sold or were still owned in 1989, the two hypotheses suggested by these differences can be seen to be unlikely: that is, **it is unlikely that households sold either in order to obtain a capital gain, or because they could not afford to keep their dwelling.** In the following final sub-section, the characteristics of households are examined further to see if they can provide some insight into the question of why industry-produced dwellings are twice as likely to have been sold as self-built dwellings.

4.3 Differences Between Households With Sold and Still Owned Dwellings

The question being addressed in this section is why dwellings originally produced by the residential construction industry are far more likely to have been sold by 1989 than dwellings produced through self-help means. So far the locational and financial characteristics of the dwellings have been examined and there is little which has shed light upon this question. In this sub-section attention turns to the characteristics of the households themselves. Implicit in this are hypotheses that the decision to sell may be associated more with factors such as residential mobility or changes in household life cycle than with market factors.

However, there is little to be found which suggests that life cycle or mobility decisions would be fruitful to investigate further. The selling and still owning populations were of similar age and family size in 1982, the dwellings themselves were similarly aged and the households have similar previous tenure histories. Although almost all of the households were two-parent with children in 1982, the non-family households are equally likely to still own their dwellings or to have sold the dwelling.

Households who still own their dwellings tended to have felt stress during the construction process through family pressures and time demands more often than those who sold their dwellings while households who sold felt that the money demands of acquiring a dwelling were particularly stressful. However these differences are consistent with the sectoral differences in the current status of the dwellings: self-help households found family and time demands stressful whereas households purchasing an industry-produced dwelling felt stress arising from financial pressures. At the same time there was little difference between the responses from the two groups in 1982 when they were asked what they thought the likely outcome would be for them if the then high interest rates continued, or when they were asked to evaluate their financial situation after occupying the dwelling in comparison to what they had thought that position would be. Thus there is nothing in the 1982 results which would indicate that the groups either had different levels of satisfaction with their situation, or were predisposed to staying or selling shortly after first occupying the dwelling.

Household incomes were very similar in 1982 (less than $300 difference), and the changes in incomes from the time construction began to when the households were interviewed in 1982 were also similar (sellers had an average of $600 more), and both groups worked a similar mean number of weeks per year. The only difference which does appear between the groups is in the occupation of the largest income earner. The occupational groupings are shown in Table 4.3.1.

Households with white collar jobs such as clerical and sales positions and those jobs aggregated in the 'other' category (includes transportation, non-construction trades and similar positions) show a greater probability of selling, while households in fishing and farming and in construction show a much lower probably of selling. At the same time professionals who are perhaps the most mobile of occupational classes are the most likely to have sold, representing almost a third of the selling population, even though as a group they were equally likely to still own the dwelling they occupied when interviewed in 1982. While white collar and other occupations were more inclined to sell, they are also more inclined to self-build (final column), a fact which is perhaps surprising since households who self-build are far less likely to sell than are households who purchase an industry house: although in terms of absolute numbers there were still more self-builders who sold than industry-purchasers (Table 4.0.1).

TABLE 4.3.1

COMPARISON OF THE OCCUPATIONS OF SELLING AND STILL OWNING HOUSEHOLDS, AND SELF-BUILDERS

OCCUPATIONAL GROUP

Frequency Percent Row Pct Col Pct	STATUS IN 1989				Self-Builders (1982)
	still own	sold	other	Total	
professional	44	30	17	91	47
	15.38	10.49	5.94	31.82	
	48.35	32.97	18.68		
	32.35	31.58	30.91		24.35
white collar	12	16	5	33	21
	4.20	5.59	1.75	11.54	
	36.36	48.48	15.15		
	8.82	16.84	9.09		10.88
ag and fish	21	4	8	33	32
	7.34	1.40	2.80	11.54	
	63.64	12.12	24.24		
	15.44	4.21	14.55		16.58
services	6	3	5	14	6
	2.10	1.05	1.75	4.90	
	42.86	21.43	35.71		
	4.41	3.16	9.09		3.11
construction	19	8	6	33	31
	6.64	2.80	2.10	11.54	
	57.58	24.24	18.18		
	13.97	8.42	10.91		16.06
other[1]	26	26	10	62	45
	9.09	9.09	3.50	21.68	
	41.94	41.94	16.13		
	19.12	27.37	18.18		23.32
retired	7	5	4	16	9
	2.45	1.75	1.40	5.59	
	43.75	31.25	25.00		
	5.15	5.26	7.27		4.66
unemployed	1	3	0	4	2
	0.35	1.05	0.00	1.40	
	25.00	75.00	0.00		
	0.74	3.16	0.00		1.04
Total	136	95	55	286	193
	47.55	33.22	19.23	100.00	68.44

[1] Includes transportation, non-construction trades and similar occupations.

Before examining these categories in more detail, two important observations can be made at this point. The first relates to the lower residential mobility of construction workers. In earlier work I have speculated that these households might represent a "formal component of the informal sector", capitalising their unpaid labour periodically though selling self-built dwellings. This speculation arose from the substantially higher representation of construction workers amongst new homeowners, and can now be seen to be erroneous. Construction workers have shown lower rates of residential mobility since 1982.

The second point is associated with the not insignificant number of retired households amongst new homeowners. These retired households are equally probable to still be in their dwellings, but about half have since sold which represents a higher level of sales than for the larger sample. Consideration is now being given in a separate research activity to the role of self-building as a form of housing provisioning for seniors[16] and the observations from this survey indicate that the stability of the strategy should be considered in that research.

Closer examination of the characteristics of still owning and selling households for each occupation provides support for an observation of a recent workshop on self-help housing: it is unwise to try and generalise self-help[17]. For example, while the 'other' occupation class who show a greater propensity to sell exhibit no differences between selling and still owning households in characteristics such as family size, age and change in income, white collar households who sold are older and have smaller families than white collar families still occupying their dwelling. At the same time, amongst fishing and farming households who have a very low propensity to sell, those who did sell are also older and have smaller families, while construction trade households who sold (but who as a group are also less inclined to sell) are younger and have larger families.

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[16] with Jan McClain.

[17] This workshop was held at the Architectural Association, University of London, May, 1987.

This lack of generalisation should not be viewed as a troubling issue. What it suggest is that the pressures or incentives which might induce a household to sell or stay will influence most households, regardless of their occupations. The decision of how to respond to those pressures will be influenced by a host of factors too diverse and intricate to be reasonably assessed in a general survey such as this.

4.4 Summary

Households purchasing an industry-built dwelling have exhibited a far greater propensity to sell that dwelling than households who either self-built or self-promoted. An attempt has been made to attribute this to locational, market or household differences, with little success. There are few locational trends which cannot be attributed to the provisioning sector, and the market hypotheses that households either sell to capture potential capital gains or are forced to sell through affordability problems are both unsupported by the evidence. Finally, some occupational groups (white collar, transportation and non-construction trades) do show a higher propensity to sell, despite the fact that for both groups the prime means of provisioning was self-build. However household characteristics such as age, family size and income do not provide any insight into the reasons why these groups have this higher propensity. The differing rates might also be a reflection of greater attachment to or satisfaction with their dwellings by self-builders as a consequence of having had more confidence and control as a result of the provisioning process[18].

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[18] Thanks to Sharon Matthews for pointing this out.

5.0 FACTORS AFFECTING THE ORIGINAL SELECTION OF A PROVISIONING STRATEGY

There are many elements which could influence the selection of a provisioning strategy. Amongst these would figure the monetary, skill and time resources available to households, their outlook, their evaluation of strategies used by others they have known, and economic considerations such as market values and costs. It has not been possible to predict the strategy which a household will adopt from the characteristics of the household, their dwelling, or the geographic location of the dwelling. While there clearly are trends such as the higher incidence of self-help in rural areas, and in the Maritime and Newfoundland, it is still very difficult to establish reliable predictors (this is discussed in Rowe 1989b). The most workable suggestion to date is that self-help housing should be considered as a sector of housing provisioning which is most frequently adopted where the prevailing market values are too low to support a commercially viable residential construction industry (Rowe 1989c).

Notwithstanding the above, it is always advisable to recheck analysis when further information becomes available, and if possible, to extend that analysis. The data from the 1989 follow-up survey provides some additional information which can prove useful in improving our understanding of the process by which households select a provisioning strategy.

In particular, the 1989 data has information asking about the skills and building experience of households, asks them to reflect upon their choice of strategy, and also provides some information missing from the first survey. In this section of the report this information is used to examine the process of selecting a provisioning strategy, and in particular, the importance of construction skills in that process.

The first major section looks at the role of skills in the selection of a provisioning strategy. Here there are some interesting results which appear to confirm some of the claims made in favour of self-help by prominent supporters such as Turner (1982). In particular, the results appear to confirm the claim that **self-help provisioning improves the understanding of building systems and the skills of the household, and, consequently, enhances the prospects that the dwelling will be adequately maintained.** In addition, it appears that **prior experience in building will greatly increase the propensity to self-build.** Where self-builders had little in the way of prior experience they appeared to rank their construction skills more highly than households who selected one of the other provisioning strategies. This suggests that **a household's confidence in their skills, whether validated through actual construction experience or not, is a factor influencing the selection of a provisioning strategy.**

Thus there is a group of self-builders who have little in the way of previous building experience but who appear to believe themselves to have a higher level of construction skills than those who decided to self-provision or buy an industry-produced dwelling. This makes the group of previously inexperienced self-builders particularly important since they could represent the recruitment group to self-building. Once recruited, these households might then stay within the self-building mode since those who do have some previous experience in construction overwhelmingly build their own dwelling.

This suggests the possibility of examining the characteristics of those with little prior building experience to see if any predictors can be found for their provisioning decisions. However this analysis largely confirms the earlier results where it is difficult to find predictors of sectoral activity from the characteristics of the dwelling or household.

5.1 Level of Construction Skills

There has been speculation that self-help is more likely where the households possesses or otherwise has access to construction skills. Alternatively, households who do not possess construction skills probably face greater barriers in the self-help process. The implication of this is that if there was a desire to increase the level of self-help activity, or improve the quality of their work, then a factor in this could be the dissemination of construction skills through a variety of means.

The questions investigated here are as follows:

1. **Are self-help households more likely to have construction skills?**
2. **If so, how important were these skills and how were they obtained?**

It has also been argued that one of the advantages of self-help is that it improves the ability of the household to maintain their dwelling. There are two elements in this, recognition of the need for repairs and maintenance through an improved understanding of building systems, and an enhanced ability to undertake or organise the necessary repairs and maintenance.

In order to examine this further we look at two additional questions associated with the construction skills of the household:

3. **Do the construction skills of self-help households improve more than those of the other households?**
4. **Does the self-help process affect the ability of households to maintain their dwelling, and the standards of dwelling quality?**

The first two questions are examined in the sub-section 5.1.1, and questions 3 and 4 are assessed in sub-section 5.1.2.

5.1.1 Are self-help households more likely to have construction skills?

Self-build households are far more likely to have previously acquired some construction skills, and these were usually obtained by building a dwelling themselves or helping someone else build a dwelling. This can be seen in Table 5.1.1 below where none of the households who had either built a dwelling themselves or helped someone else to build, purchased an industry dwelling, and almost all chose to build their new dwelling themselves.

TABLE 5.1.1

CONSTRUCTION SECTOR BY PREVIOUS BUILDING EXPERIENCE

Frequency Percent Row Pct Col Pct	never built before	odd-jobs	helped others	built a house before	Total
self-build	26 19.70 25.00 61.90	20 15.15 19.23 80.00	38 28.79 36.54 90.48	20 15.15 19.23 86.96	104 78.79
self-promote	7 5.30 43.75 16.67	3 2.27 18.75 12.00	3 2.27 18.75 7.14	3 2.27 18.75 13.04	16 12.12
industry	9 6.82 75.00 21.43	2 1.52 16.67 8.00	1 0.76 8.33 2.38	0 0.00 0.00 0.00	12 9.09
Total	42 31.82	25 18.94	42 31.82	23 17.42	132 100.00

This provides a fairly clear indication that the previous acquisition of construction skills does influence the choice of provisioning strategy, however many households who did not previously possess those skills still chose to build their own dwelling. This raises two questions: **how can we account for the choice of provisioning strategy for those households where construction skills were not previously held and what is the impact on the quality of the dwelling constructed?** However, before turning to these questions it is useful to examine the skill level issue further.

In the 1989 follow-up, respondents were asked to rate their construction skills prior to and following the construction of the dwelling that they built between 1978 and 1981. The averages of the rating (on a scale of 1 to 7) that they gave themselves are presented in the following table (Table 5.1.2). Self-helpers gave themselves a higher rating for every construction skill than did either of the other two groups. In addition, self-provisioning households gave themselves a higher rating than did industry purchasing households in most categories. Assuming for the moment that these ratings do provide an indicator of the relative skill levels[19], then the information from this table is consistent with that in Table 5.1.1 above; clearly self-help households do have a higher skill level prior to the construction of the dwelling.

Although it appears likely that this self-evaluation of construction skills is relatively unbiased. Even if it were biased. the information presented in Table 5.1.2 would still indicate that self-help households at least **believe** themselves to be in possession of a higher level of most construction skills and this would be consistent with their decision to self-build.

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[19] Given that the standard deviations for self-help are usually similar to those for the other two categories but that the ranges are much broader, this appears to be a reasonable assumption.

TABLE 5.1.2

COMPARISON OF CONSTRUCTION SKILLS AND SECTOR OF CONSTRUCTION[20]

CONSTRUCTION SKILL Sector of Construction	N	Minimum	Maximum	Mean	Std Dev
CARPENTRY					
Self-build	107	1.0000000	7.0000000	4.1308411	1.7966642
Self-promote	15	1.0000000	5.0000000	2.6666667	1.2909944
Industry	11	1.0000000	7.0000000	2.5454545	1.8635255
ELECTRICAL					
Self-build	107	1.0000000	7.0000000	2.4299065	1.6996789
Self-promote	15	1.0000000	4.0000000	1.7333333	1.0327956
Industry	11	1.0000000	7.0000000	2.0000000	1.8973666
PLUMBING					
Self-build	107	1.0000000	7.0000000	2.8037383	1.7721070
Self-promote	15	1.0000000	4.0000000	1.8000000	1.0823255
Industry	11	1.0000000	6.0000000	1.9090909	1.6403991
MANAGEMENT					
Self-build	106	1.0000000	7.0000000	4.1603774	2.0523473
Self-promote	15	1.0000000	6.0000000	2.6666667	1.6761634
Industry	11	1.0000000	7.0000000	2.8181818	2.1825756
KNOWLEDGE OF BUILDING SYSTEMS					
Self-build	106	1.0000000	7.0000000	4.1792453	2.0037925
Self-promote	17	1.0000000	6.0000000	3.0588235	1.6759545
Industry	11	1.0000000	4.0000000	2.5454545	1.0357255

Before addressing the second question about the importance of these construction skills and how they were obtained, consideration will be given to the two derived questions noted above. These related to how we can account for self-building by households with no previous experience and the quality of the construction by households with no previous building experience.

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[20] In some tables the number of decimals is excessive, for example the measures appearing in Table 5.1.2. However these tables were generated by a statistical software package and for reasons of expediency the original tables were not rerun with limits on the decimals.

Turning to the first question, the following table focuses on the first two columns of Table 5.1.1 above, that is, those households who either have no previous experience or who have only worked at odd-jobs previously. It is difficult to distinguish any significant differences in the characteristics of the households or their dwellings from the information presented in Table 5.1.3. While there are differences among the three sectors, these differences are consistent with those noted in Rowe (1989b) where it was concluded that it was not possible to predict the construction sector from the characteristics of households.

TABLE 5.1.3

MEAN VALUES FOR SELECTED CHARACTERISTICS OF HOUSEHOLDS WITH NO PREVIOUS BUILDING EXPERIENCE

Characteristic	Households with Little Experience Self-Build	 Self-Promote	 Industry	All Self-Build[1]
AVERAGE AGE OF HEADS	33.30	34.30	37.30	34.92
GROSS INCOME-YR CONSTRUCTION	17527.27	17400.00	21880.00	16278.39
DWELLING+LAND COST TO OCCUPANCY	40738.10	47000.00	40500.00	42476.47
VALUE OF DWELLING-1982	58022.73	63100.00	63000.00	54217.39
MONTHLY PAYMENTS-LOAN & MORTGAGES	256.33	332.61	467.06	259.34
GROSS DEBT SERVICE ALL PAYMENTS	0.23	0.26	0.24	0.18
SWEAT EQUITY INDEX	38.96	10.16	2.16	46.56
VALUE OF DWELLING-1989	90966.67	87750.00	90000.00	83619.05
GROSS INCOME-1989	39533.33	43250.00	48888.89	39907.14

[1] This includes all self-builders from the 1982 sample.

We have already seen that if a household possesses, or believes themselves to be in possession of construction skills, and have previous experience in building a dwelling whether on their own or helping with the construction of a dwelling, then it is likely that they will self-build. However, where households do not have these construction skills (as in the table above) it is difficult to identify any predictors from the characteristics of the household or the dwelling.

However, the household's own evaluation of their construction skills suggests that skill levels might still be an important factor influencing the choice of construction sectors. Households who self-build but have little previous building experience rate their construction skills higher than the other households with little experience but who chose to self-provision or purchase an industry built house. This is shown in the following table (5.1.4) where the means of each skill category are presented by construction sector.

TABLE 5.1.4

EVALUATION OF HOUSEHOLD CONSTRUCTION SKILLS BY HOUSEHOLDS WITH LITTLE PREVIOUS CONSTRUCTION EXPERIENCE

Construction Skill Sector of Construction	N	Minimum	Maximum	Mean	Std Dev
CARPENTRY					
self-build	46	1.0000000	7.0000000	3.2391304	1.4934640
self-promote	8	1.0000000	4.0000000	2.2500000	1.2817399
industry	10	1.0000000	7.0000000	2.5000000	1.9578900
ELECTRICAL					
self-build	46	1.0000000	7.0000000	2.1956522	1.6002717
self-promote	8	1.0000000	4.0000000	1.6250000	1.0606602
industry	10	1.0000000	7.0000000	2.1000000	1.9692074
PLUMBING					
self-build	46	1.0000000	7.0000000	2.5217391	1.7222612
self-promote	8	1.0000000	4.0000000	2.1250000	1.3562027
industry	10	1.0000000	6.0000000	2.0000000	1.6996732
MANAGEMENT					
self-build	46	1.0000000	7.0000000	3.5000000	1.8708287
self-promote	8	1.0000000	4.0000000	2.1250000	1.5526475
industry	10	1.0000000	7.0000000	2.5000000	2.0138410
KNOWLEDGE OF BUILDING SYSTEMS					
self-build	46	1.0000000	7.0000000	3.0652174	1.6786526
self-promote	10	1.0000000	4.0000000	2.5000000	1.4337209
industry	10	1.0000000	4.0000000	2.5000000	1.0801234

Thus it appears that **the prior possession of construction skills, or at least the belief that you possess those skills inclines a household towards self-building.** Care should be taken making this generalisation though, since it can be noted in both Table 5.1.2 and Table 5.1.4 above, that the range for self-builders includes households whose own evaluation of their skills is very negative (scores of 1 or 2 for example). These households still self-built. Thus while we can note that, in general, there is an association between skill level and the propensity to self-build, it would be unwise to be too categorical in drawing conclusions from this. For example, it would be incorrect to say that households who self-build have prior construction experience, or believe themselves to be in possession of construction skills.

Turning now to the second derived question about the quality of the construction undertaken by those with little previous construction experience, the information presented in Table 5.1.5 indicates that according to the rating provided by the interviewer[21] there is no appreciable difference between self-builders with previous construction experience and those who had little previous experience in terms of the rating of the quality of the dwelling in 1989. While it is possible that differences in the quality of the work might have been resolved by the time the 1989 interviews were held, it is more likely that there were **no systematic differences in the quality of the original construction work.**

It is also notable from Table 5.1.5 that there are few appreciable differences among construction sectors. It appears that the windows of self-help dwellings have deteorated more rapidly than those built in the other sectors. This is discussed further below where this problem is shown to be related to a particular brand of window widely available in P.E.I. at the time.

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[21] The interviewer rating methodology is discussed further in Section 6.

TABLE 5.1.5

INTERVIEWER EVALUATIONS OF EXTERIOR CONDITION BY CONSTRUCTION SECTOR

BUILDING COMPONENT
Sector of Construction

	N	Minimum	Maximum	Mean	Std Dev
EXTERIOR FOUNDATION WALLS					
self-build	103	5.0000000	7.0000000	6.3980583	0.5302572
s/b no exp.	46	6.0000000	7.0000000	6.4130435	0.4978213
self-promote	16	5.0000000	7.0000000	6.2500000	0.5773503
industry	12	4.0000000	7.0000000	6.2500000	0.8660254
EXTERIOR WALLS					
self-build	105	3.0000000	7.0000000	6.2857143	0.7167540
s/b no exp.	45	3.0000000	7.0000000	6.2000000	0.8686458
self-promote	16	6.0000000	7.0000000	6.3125000	0.4787136
industry	12	5.0000000	7.0000000	6.5000000	0.6741999
EXTERIOR WALL SURFACE					
self-build	106	4.0000000	7.0000000	5.9245283	0.8245993
s/b no exp.	46	4.0000000	7.0000000	5.8043478	0.8849247
self-promote	16	5.0000000	7.0000000	6.1875000	0.6551081
industry	12	5.0000000	7.0000000	6.1666667	0.7177406
EXTERIOR DOORS					
self-build	104	2.0000000	7.0000000	5.8173077	0.9426715
s/b no exp.	45	4.0000000	7.0000000	5.8888889	0.7142136
self-promote	16	5.0000000	7.0000000	6.0000000	0.6324555
industry	12	5.0000000	7.0000000	5.8333333	0.7177406
EXTERIOR WINDOWS					
self-build	104	1.0000000	7.0000000	5.6153846	1.1684168
s/b no exp.	45	3.0000000	7.0000000	5.6000000	1.0090500
self-promote	16	5.0000000	7.0000000	5.8125000	0.6551081
industry	12	4.0000000	7.0000000	5.7500000	0.8660254

To summarise the discussion to date, it appears that households with previous construction experience tend overwhelmingly to self-build, but that self-building is also undertaken by households with little previous experience. However these inexperienced households either possess construction skills, or believe themselves to be in possession of these skills. Given the ratings of the condition of the exterior of the dwelling by the interviewer it is likely that many of the households with little previous construction experience must either have possessed sufficient construction skills, or have gained access to them, since today there is no appreciable difference between buildings built by the different sectors, or between experienced and inexperienced self-builders.

Thus skills appear to influence the decision as to the construction sector, but do not appear to be associated with the quality of the construction. The dwellings built by self-builders, whether experienced or inexperienced, have stood up as well as those built by the industry, whether on their own initiative or under contract to self-provisioning households.

5.1.2 Effect of self-help on maintenance practices and standards

Turner(1982) and others (for example Schlyter 1984) have argued that if a house is built by the owners, then they will gain skills in the process which will better enable them to maintain their dwelling. Part of the skills said to be acquired are those of recognising problems in dwelling systems, and a subsequent raising of the standards of building maintenance (see Turner 1982: for the clearest statement of this argument). We have already seen that when the dwellings were examined some 7-11 years after construction started, there was little appreciable difference in quality among construction sectors. It was suggested above that this could either reflect comparable construction quality, or appropriate maintenance practices so that any unevenness in original quality has been resolved.

TABLE 5.1.6

CHANGE IN MAINTENANCE STANDARDS AMONG SELF-HELP HOUSEHOLDS

CONSTRUCTION SECTOR

```
Frequency| CHANGE IN STANDARDS OF MAINTENANCE
Percent  |
Row Pct  |little   increase increase wud hire
Col Pct  | diff.  | some   | a lot  |someone |  Total
---------+--------+--------+--------+--------+
         |     19 |     38 |     39 |      3 |     99
self-    |  18.10 |  36.19 |  37.14 |   2.86 |  94.29
build    |  19.19 |  38.38 |  39.39 |   3.03 |
         | 100.00 |  92.68 |  92.86 | 100.00 |
---------+--------+--------+--------+--------+
         |      0 |      3 |      3 |      0 |      6
self-    |   0.00 |   2.86 |   2.86 |   0.00 |   5.71
promote  |   0.00 |  50.00 |  50.00 |   0.00 |
         |   0.00 |   7.32 |   7.14 |   0.00 |
---------+--------+--------+--------+--------+
         |      0 |      0 |      0 |      0 |      0
industry |   0.00 |   0.00 |   0.00 |   0.00 |   0.00
         |      . |      . |      . |      . |
         |   0.00 |   0.00 |   0.00 |   0.00 |
---------+--------+--------+--------+--------+
Total          19       41       42        3      105
            18.10    39.05    40.00     2.86   100.00
```

In fact, almost 80% of self-builders felt that their standards of maintenance and repair had increased as a result of their working on their own home (Table 5.1.6 above). This provides support to Turner's argument, as do the results from the Table 5.1.7 below showing that these households are also more likely to undertake maintenance and repair work themselves.

Over 80% of the households who worked on their own home indicated that this increased their propensity to undertake maintenance and repair activities themselves, and 59% of these households reported the increased propensity was significant. This would appear to provide solid support for the arguments that self-help has impacts upon the dwelling and the households lasting well beyond the construction phase.

TABLE 5.1.7

IMPACT OF SELF-HELP ON THE LIKELIHOOD OF HOUSEHOLD'S PROVIDING MAINTENANCE THEMSELVES

```
CONSTRUCTION SECTOR

Frequency| CHANGE IN LIKELIHOOD OF DOING MAINTENANCE
Percent  |
Row Pct  | no       increase wud hire
Col Pct  |diff.    | some    |greatly  |someone  |  Total
---------+---------+---------+---------+---------+
         |      15 |      24 |      59 |       2 |    100
self-    |   14.02 |   22.43 |   55.14 |    1.87 |  93.46
help     |   15.00 |   24.00 |   59.00 |    2.00 |
         |   93.75 |   96.00 |   92.19 |  100.00 |
---------+---------+---------+---------+---------+
         |       1 |       1 |       5 |       0 |      7
self-    |    0.93 |    0.93 |    4.67 |    0.00 |   6.54
promote  |   14.29 |   14.29 |   71.43 |    0.00 |
         |    6.25 |    4.00 |    7.81 |    0.00 |
---------+---------+---------+---------+---------+
         |       0 |       0 |       0 |       0 |      0
industry |    0.00 |    0.00 |    0.00 |    0.00 |   0.00
         |       . |       . |       . |       . |
         |    0.00 |    0.00 |    0.00 |    0.00 |
---------+---------+---------+---------+---------+
Total           16        25        64         2      107
             14.95     23.36     59.81      1.87   100.00
```

However it is possible to look at the actual maintenance practices in more detail with the results of the 1989 follow-up since households were asked about improvements, repairs and maintenance that had been done to their dwelling since it was first occupied, and how this work was organised. This section of the report contains a more detailed examination of the maintenance and repair practices of households.

Households who self-built felt that their construction skills improved the greatest, and inexperienced self-builders felt that they had achieved a greater improvement than experienced self-builders. This is shown in Table 5.1.8 below where the changes in the 7-point scale of construction skills realised through working on their own home are averaged for all skills.

TABLE 5.1.8

RESPONDENTS EVALUATION OF IMPROVEMENTS IN SKILLS THROUGH WORKING ON THEIR OWN HOUSE

CHANGE IN CONSTRUCTION SKILLS

Frequency Percent Row Pct Col Pct	CONSTRUCTION SECTOR				
	exper. self-build	inexper. self-build	self-provision	industry	Total
NO CHANGE	19	3	6	3	31
	14.50	2.29	4.58	2.29	23.66
	61.29	9.68	19.35	9.68	
	32.76	6.52	37.50	27.27	
LT 1.0	19	14	3	3	39
	14.50	10.69	2.29	2.29	29.77
	48.72	35.90	7.69	7.69	
	32.76	30.43	18.75	27.27	
1.0-1.5	9	14	5	2	30
	6.87	10.69	3.82	1.53	22.90
	30.00	46.67	16.67	6.67	
	15.52	30.43	31.25	18.18	
1.5-2.0	6	4	2	0	12
	4.58	3.05	1.53	0.00	9.16
	50.00	33.33	16.67	0.00	
	10.34	8.70	12.50	0.00	
2.0-2.5	3	6	0	1	10
	2.29	4.58	0.00	0.76	7.63
	30.00	60.00	0.00	10.00	
	5.17	13.04	0.00	9.09	
2.5-3.0	2	3	0	0	5
	1.53	2.29	0.00	0.00	3.82
	40.00	60.00	0.00	0.00	
	3.45	6.52	0.00	0.00	
3.0-3.5	0	2	0	2	4
	0.00	1.53	0.00	1.53	3.05
	0.00	50.00	0.00	50.00	
	0.00	4.35	0.00	18.18	
Total	58	46	16	11	131
	44.27	35.11	12.21	8.40	100.00

Thus the answers to both of the questions addressed in this subsection are affirmative. Self-help does appear to increase the standards households apply to dwelling maintenance, and enhance their abilities to both evaluate dwelling quality and to undertake maintenance and repair work themselves. Since self-help repairs and maintenance will be cheaper, it is likely that the maintenance and repair of self-help dwellings will be more likely than for industry dwellings. Further, since the quality of self-help work has been shown to be similar to that of the residential construction industry, then we would expect that in the longer term, self-help households will maintain their dwellings to a higher standard. This proposition is given further consideration in Section 7.

5.1.3 Kit Homes

Kit homes have sometimes been promoted as a means of improving the affordability of housing. Kit homes were used by 8 households responding to the 1989 follow-up survey, or about 6% of the sample[22]. Of these 8 households, 5 were self-build (3 experienced self-builders), and 3 were occupied by self-promoting households.

Kit homes with an average initial cost of $42710 were considerably more expensive than self-help dwellings ($35960) but less than the average cost of $54520 for industry and self-promoted homes. The labour contributed by the household was clearly a factor in this, self-building households about 49% of the required labour themselves, while those households occupying a kit home provided about 14.7% of the necessary labour. Incomes of self-builders and of households occupying kit homes were very similar in 1982 (24400 vs. $23300) and considerably below the average of industry and self-promoting households ($30600). Thus the initial level of debt service for kit homes was similar to that for dwellings produced by the industry or self-promoting households (lower incomes and lower costs) but considerably higher than for self-builders (similar incomes but higher costs).

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[22] It is possible that a greater proportion of those households who have sold their dwellings since 1982 used kit homes. This cannot be determined since the 1982 survey did not consider the use of kit homes specifically, however my impression is that the proportion of the original sample was certainly not higher than 6%.

The implication is that kit homes are an avenue used by lower income households to gain access to home-ownership, but that it is unlikely to improve access as much as does self-building.

5.2 Choice of a Provisioning Strategy

From the 1982 survey it was possible to establish the incidence of self-help housing provisioning in P.E.I., and to make estimates of the level of activity in other areas of Canada. About two-thirds of new single-detached construction, and half of total starts, are self-built in P.E.I. In addition, a further 16% of singles are the result of self-provisioning. Thus about 66% of housing starts in P.E.I. are self-help, and 84% of new single detached dwellings. This is a similar level to that now being predicted in several other areas implying that self-help is the major source of new housing in a number of housing markets. Clearly it is important to better understand the determinants of self-help. However, using the 1982 data

> ...it appears there are a number of elements associated with self-help housing provision and which may indeed be very important to self-help strategies, it is still not possible to predict which households will use self-help strategies, or the strategies they are most likely to adopt. It is suggested that this should not be surprising or worrisome: if self-help is the major sector of housing production then there is no reason to expect it to be any easier to predict that activity than, say, it is to provide satisfactory demand functions for housing, a notoriously difficult task which has confounded analysts for decades (Rowe 1989b).

It has been seen that there is a group of self-builders who have little in the way of previous building experience but who appear to believe themselves to have a higher level of construction skills than those who decided to self-provision or buy an industry-produced dwelling. This group of previously inexperienced self-builders is particularly important since they could represent the recruitment group to self-building. Once recruited, these households might then stay within the self-building mode since those who do have some previous experience in construction overwhelmingly build their own dwelling.

This suggests the possibility of reexamining the characteristics of those with little prior building experience to see if any predictors can be found for their provisioning decisions.

Over half of those who are self-building for the first time have previously owned a dwelling. Almost 55% of the inexperienced self-builders had previously owned a house which is almost 10% more than was the case for those self-builders with previous building experience, but still less usual than was the record of self-provisioning and industry-purchasing households.

TABLE 5.2.1

HOUSEHOLD CHARACTERISTICS OF HOUSEHOLDS BY PREVIOUS OWNERSHIP OF A DWELLING AND SECTOR OF PROVISIONING

	Self-Build		Self-	
	Experienced	Inexperienced	Provision	Industry
Previous Owners				
Average Age of Heads (1982)	39.62	37.44	44.73	36.56
Family Size (1982)	3.69	3.88	4.00	3.89
Family Size (1989)	3.78	3.88	3.09	3.78
Location	3.74	3.76	3.64	2.67
First Time Owners				
Average Age of Heads (1982)	30.55	28.38	28.00	38.00
Family Size (1982)	3.00	3.05	3.17	3.00
Family size (1989)	3.42	4.43	4.33	3.67
Location	4.55	4.19	4.00	2.00

Information about previous ownership of dwellings was not available from the 1982 data but with the 1989 data it is now possible to further partition provisioning sectors by prior ownership of a dwelling. As can be seen from Table 5.2.1 this is a very useful classification. First time owners were younger and their families expanded much more rapidly from 1982 to 1989. In addition, for the three self-help categories, first time owners were more likely to locate in rural areas. This is determined from the 'location' measure which is the mean of the community size variable where the value of 1 represents urban areas, 2 suburban, and so on to 5 for rural areas. Thus the higher the score for 'location' the greater the proportion in rural areas.

Since we are interested in the recruitment to self-help, it is instructive to compare inexperienced self-builders to industry households. For those who have previously owned there is little difference in household characteristics except that industry production is more urban. However first time self-builders are much younger and their families expanded more rapidly, compared to first time industry households. In addition, the rural-urban trend is more pronounced for first time owners.

It appears that there are probably different reasons for households adopting a self-help strategy. Younger households have more time and contribute more sweat equity to achieve a house with a lower debt load and is also thus more affordable. Typically this would be their first dwelling. Older households appear to contribute somewhat lower levels of sweat equity and build a more expensive dwelling. While their incomes are not much higher they appear more likely to have some built up equity in their previous dwelling which lowers the debt load on the new dwelling. Although it is outside the resources of the current research, it would be useful to explore these characteristics further.

5.2.1 Summary

To sum up the analysis to date, we have noted that experienced self-builders will normally continue to self-build, but that there are also self-builders without much in the way of previous building experience. We know, however, that they have more confidence in their construction skills than do the other households without much previous experience. It is important then to understand the factors influencing these first time self-builder since they potentially represent new recruits to self-building who, once recruited, will stay self-builders. We have also seen that the stratification of households by whether they have previously owned a dwelling is useful and, that by doing this we can identify two groups of inexperienced self-builders. Those who have not previously owned a house are considerably older and already have their families compared to those inexperienced self-builders who have not previously owned a dwelling. They are at a younger stage in their family life cycle. Households in the other two self-help categories who have not previously owned a dwelling are also at a younger stage in their life cycles.

5.3 Summary

The follow-up survey has provided the resources for some very important insights into self-help strategies. We have seen that households who have previous construction experience have a strong propensity to self-build, and that inexperienced self-builders rate their construction skills more highly than did households who self-provisioned or bought an industry house.

This focused attention upon these inexperienced self-builders as a potential class of new recruits to self-building who, once in the class, would remain in the future. It was found that self-help households who have not previously owned a dwelling are at a younger life cycle stage and appear to have somewhat different self-help strategies since they contribute more sweat equity and build less expensive dwellings than do those households who have previously owned a dwelling. This suggests that if we treat self-help as a provisioning sector, we can probably identify different strategies within that sector, and these strategies are analogous to those within the industry sector. Younger first-time homeowners build less expensive houses, older households build more expensive dwellings. The difference is that within self-help, once households are recruited to the sector, they tend to stay. And since self-help provisioning is much more affordable than industry provisioning, it is selected by most of the younger first-time homeowners.

Thus by looking at the new recruits to self-help we are able to begin to identify the reasons why this sector is selected by such a large proportion of homeowners.

The follow-up data also provided positive responses to some important questions about the self-help sector. We have been able to confirm Turner's suggestions that self-help provisioning will lead to higher maintenance standards (see also Section 7). It also appears that there is little difference between the sectors in terms of the quality of their work (this will be discussed further in Section 6). These observations have important policy implications since they confirm that self-help can be a useful contributor to housing provisioning, and can provide long-term benefits for the quality of the housing stock which might exceed those obtained through industry provisioning.

6.0 CURRENT QUALITY OF DWELLINGS

Quality is always an important issue in housing policy and research and it is no less important when self-help housing is under consideration. Questions are frequently raised about the quality of self-help relative to industry provisioning, particularly with self-builders. There are usually two poles to these questions. Proponents of self-help argue that because the builder is going to occupy the dwelling, and because the dwelling is so important an asset in the wealth of the household, then the self-builder is bound to be very concerned with quality. Others feel that construction is a complex process and that inexperienced builders cannot perform as well as experienced builders: consequently the quality of the product of self-building cannot be as good as that produced by experienced residential builders.

Quality was not directly assessed in the 1982 survey which was more concerned with the provisioning process than with the product. However, the anecdotal evidence of interviewers and respondents, and industry and government sources, appeared to indicate that industry-produced dwellings were more likely to have quality problems. Indeed, at the time the major source of complaints to the Consumer Affairs Division of the Provincial government was by homeowners against builders.

The 1989 follow-up study obtained the owner's evaluation of the quality of their dwelling on key building components, and the interviewers also rated 5 exterior structural components. The information on quality is clearly not 'expert' and, particularly with the respondents evaluation, is subject to some very important factors which likely bias the results. These biases are frequently discussed in the context of the 'need for repair' question, different versions of which are used in the Census and the HFE surveys, and in this follow-up.

In general, asking someone about the condition of the dwelling they live in is difficult because their evaluation will be influenced by their knowledge of house building and structures, expectations and standards. In the previous section it was shown that self-builders appear to have higher standards and better knowledge about building systems and their own dwelling than households using industry provisioning. Consequently, self-builders are likely to be more critical of the quality of their dwellings, and to provide a lower quality rating.

The evaluations by the interviewers should prove more reliable since they applied the same standard to all dwellings regardless of provisioning sector. The interviewers were shown what to look for in the five exterior building components, and were also directed towards key elements in each component by the question. The questions and approach were developed at the National Office of CMHC by the author (Rowe 1985) and tested in an External Research project in St. John's (Zanasi and Rowe 1988)[23]. Unfortunately, early snow in P.E.I. made it difficult to assess the foundations of many of the dwellings, particularly for those interviews conducted near or after dark. Exterior photographs were also taken when light permitted (some of these are appended in Appendix 2).

The follow-up survey shows very little quality difference between sectors. In general there is no statistically significant association between the provisioning sector and the quality of any building component, and this holds for both occupant and interviewer ratings. While self-provisioned dwellings were judged to be the best quality, followed by industry and self-build, the margins are so small that they could easily be influenced by the factors discussed above.

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[23] The intention of the project was to develop a survey instrument which could be reliably administered by a trained interviewer. The eventual goal was to develop an instrument which could be used by the household itself. The approach was to refine existing inspector delivered instruments by reducing the number of questions and using drawings of key components to ensure an even application of the method.

6.1 Comparison of Quality by Provisioning Sector

In the previous section a distinction was made between experienced and inexperienced self-builders. That distinction is also germane to a consideration of the current quality of the dwellings produced since it touches upon one of the basic questions about whether there are differences in the quality of the output of the different sectors. That question is addressed in this sub-section.

There are two sources of information on quality, and neither can be regarded as completely reliable. The owners of the dwellings were asked to rate the condition of the following building components on a 7-point scale running from 1 (beyond repair) to 7 (perfect condition) with the mid-point 4 described as 'minimum acceptable'. Given that all of the dwellings were built since 1978 it is reasonable that most of the ratings will be in the upper end of the scale. The system components rated by the occupants were:

- sitework
- outside walls
- chimney
- doors, windows
- attached structures
- finish carpentry
- flooring
- drywall
- wall surfaces
- electrical
- heating
- plumbing
- insulation
- other

The interviewers completed a 7-point rating of the following exterior components:

- exterior foundation walls
- exterior walls above foundation
- surface of the exterior walls above foundation
- condition of exterior doors, frames, sills and weatherstripping
- condition of exterior windows, frames, sashes, sills and weatherstripping

An analysis of variance for all of these measures of quality with the sector of provisioning showed no statistically significant associations. These results imply no significant differences in quality which can be associated with the provisioning sector, or, in other words, **the buildings built by self-help are similar in quality to those constructed by the industry.**

This is a very important result, but it should be borne in mind that none of the building components were assessed by experts. There is a reasonably significant association between the interviewers rating of the outside walls and wall finish (above foundation) and the occupants rating of the outside walls giving some confidence in the occupants evaluations[24]. This association also holds when the data is stratified by provisioning sector

The conclusion that it is unlikely there are quality differences between the sectors is not surprising. Thus experienced builders such as residential building contractors may do better work, and that the vested interests of self-help builders in obtaining a good quality dwelling might lead to practices which offset their lack of experience.

In addition, all of the dwellings were wood-frame and the construction methods for this type of system are quite well documented and very accessible, even to those with little previous knowledge. In addition, almost half of the self-builders had previously worked on their own dwelling, or helped build a dwelling, and most of the self-builders used sub-contractors for many of the specialised trade work.

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[24] Chi-Square of outside wall is 38.394 with 12 DF (Probability=0.000) and Cramer's V is 0.311. For outside wall finish the Chi-Square is 22.507 with 9 DF (Probability=0.007) and Cramer's V is 0.238.

While there are no significant differences among the provisioning sectors, instances where dwelling components were assessed with a low score indicate problems which, although not widespread, might warrant further attention.

The results of the standard need for repair question stratified by construction sector also show no statistically significant association between provisioning sector and the need for repair[25]. Industry-produced dwellings were more likely to require minor repairs. The likelihood of industry dwellings needing major repairs was about the same for experienced self-builders and industry. (However the cell count is too low for industry builders to support any conclusion on major repairs). Table 6.1.1 shows the results of this comparison.

TABLE 6.1.1

NEED FOR REPAIR BY PROVISIONING SECTOR

```
Need for Repair

Frequency|       Provisioning Sector
Percent  |
Row Pct  |
Col Pct  |EXPERIEN|INEXPERI|SELF-PRO|INDUSTRY|
         |CED SELF|ENCED SE|VISION  |        |  Total
---------+--------+--------+--------+--------+
major    |      5 |      2 |      0 |      1 |      8
repairs  |   3.82 |   1.53 |   0.00 |   0.76 |   6.11
         |  62.50 |  25.00 |   0.00 |  12.50 |
         |   8.62 |   4.44 |   0.00 |   8.33 |
---------+--------+--------+--------+--------+
minor    |     15 |      9 |      3 |      7 |     34
repairs  |  11.45 |   6.87 |   2.29 |   5.34 |  25.95
         |  44.12 |  26.47 |   8.82 |  20.59 |
         |  25.86 |  20.00 |  18.75 |  58.33 |
---------+--------+--------+--------+--------+
maintain |     38 |     34 |     13 |      4 |     89
only     |  29.01 |  25.95 |   9.92 |   3.05 |  67.94
         |  42.70 |  38.20 |  14.61 |   4.49 |
         |  65.52 |  75.56 |  81.25 |  33.33 |
---------+--------+--------+--------+--------+
Total          58       45       16       12      131
            44.27    34.35    12.21     9.16   100.00
```

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[25] Chi-Square 10.627 with 6 DF (Probability=0.101) and Cramer's V=0.201.

It is reasonable to expect that dwellings of the age under consideration should not require major repairs, and, in the case of environmental damage and similar events, should only unusually require major repairs. Thus the information on repairs done between 1982 and 1989 might provide an indication of the quality of the original construction (see Table 6.1.2).

TABLE 6.1.2

FREQUENCY OF REPAIRS BY PROVISIONING SECTOR

```
Number of Repairs

Frequency  |         Provisioning Sector
Percent    |
Row Pct    |
Col Pct    |EXPERIEN|INEXFERI|SELF-PRO|INDUSTRY|
           |CED SELF|ENCED SE|VISION  |        |  Total
-----------+--------+--------+--------+--------+
no repairs |     11 |      8 |     29 |     37 |     85
           |   5.67 |   4.12 |  14.95 |  19.07 |  43.81
           |  12.94 |   9.41 |  34.12 |  43.53 |
           |  18.97 |  17.39 |  69.05 |  77.08 |
-----------+--------+--------+--------+--------+
1 repair   |     14 |     15 |      3 |      2 |     34
           |   7.22 |   7.73 |   1.55 |   1.03 |  17.53
           |  41.18 |  44.12 |   8.82 |   5.88 |
           |  24.14 |  32.61 |   7.14 |   4.17 |
-----------+--------+--------+--------+--------+
2 repairs  |     16 |      9 |      6 |      2 |     33
           |   8.25 |   4.64 |   3.09 |   1.03 |  17.01
           |  48.48 |  27.27 |  18.18 |   6.06 |
           |  27.59 |  19.57 |  14.29 |   4.17 |
-----------+--------+--------+--------+--------+
3 repairs  |      9 |      5 |      4 |      3 |     21
           |   4.64 |   2.58 |   2.06 |   1.55 |  10.82
           |  42.86 |  23.81 |  19.05 |  14.29 |
           |  15.52 |  10.87 |   9.52 |   6.25 |
-----------+--------+--------+--------+--------+
4 repairs  |      4 |      8 |      0 |      3 |     15
           |   2.06 |   4.12 |   0.00 |   1.55 |   7.73
           |  26.67 |  53.33 |   0.00 |  20.00 |
           |   6.90 |  17.39 |   0.00 |   6.25 |
-----------+--------+--------+--------+--------+
5+ repairs |      4 |      1 |      0 |      1 |      6
           |   2.06 |   0.52 |   0.00 |   0.52 |   3.09
           |  66.67 |  16.67 |   0.00 |  16.67 |
           |   6.90 |   2.17 |   0.00 |   2.08 |
-----------+--------+--------+--------+--------+
Total            58       46       42       48      194
              29.90    23.71    21.65    24.74   100.00
```

The statistical association between the sector of provisioning and the number of repairs carried out is very strong: Chi-Square = 72.907 with 15 DF (Probability = 0.000) and Cramer's V = 0.354. This clearly shows that more repairs were done on self-built dwellings than on industry and self-provisioned dwellings, however it does not necessarily imply that either all necessary repairs were done or that all repairs were equally necessary. Thus, it is possible that important repairs might go unattended to in industry-built houses. This assumption would be consistent with the observation that households who built their own homes are likely to have higher maintenance standards than were those who purchased an industry-built home. It is also possible that these higher standards might lead to a higher than necessary level of repair, or the undertaking of more extensive activities which might include some repair elements in addition to improvements and maintenance. Thus it is useful to look at the reasons for repairs. Table 6.1.3 shows the reason for the repair first mentioned by respondents.

The kinds of maintenance and need for repair activities of households is addressed in the following section. Table 6.1.3 shows more repairs undertaken by self-builders, but this is not necessarily a reflection of the quality of the original construction. For example, improper installation is an indicator of deficiencies in construction and it was most frequently cited by industry sector households (60% of the industry sector repairs were attributed to problems in the original installation). On the other hand, material deficiencies were an important reason for repairs in both self-build categories and while they cannot be attributed to deficiencies in installation it might be the case that self-builders were more likely to use inappropriate materials or to accept deficient materials.

Thus, the strong association between the number of repairs and the sector of provisioning should only be used as an indicator that self-build households carry out more repairs. It should not be used to base an evaluation of the quality of the completed work, and does not contradict the material presented earlier in this section where there was no association between quality and self-building sector.

TABLE 6.1.3

REASON FOR REPAIR BY PROVISIONING SECTOR

Reason for Repair

Frequency Percent Row Pct Col Pct	Provisioning Sector EXPERIENCED SELF	 INEXPERIENCED SE	 SELF-PROVISION	 INDUSTRY	Total
environ damage	6 5.94 42.86 13.33	4 3.96 28.57 11.43	2 1.98 14.29 18.18	2 1.98 14.29 20.00	14 13.86
improper install.	14 13.86 43.75 31.11	10 9.90 31.25 28.57	2 1.98 6.25 18.18	6 5.94 18.75 60.00	32 31.68
material deffic.	9 8.91 40.91 20.00	9 8.91 40.91 25.71	3 2.97 13.64 27.27	1 0.99 4.55 10.00	22 21.78
equip. failure	2 1.98 66.67 4.44	1 0.99 33.33 2.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.97
energy improv.	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.99 100.00 9.09	0 0.00 0.00 0.00	1 0.99
normal wear & tear	9 8.91 45.00 20.00	7 6.93 35.00 20.00	3 2.97 15.00 27.27	1 0.99 5.00 10.00	20 19.80
other	5 4.95 55.56 11.11	4 3.96 44.44 11.43	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 8.91
Total	45 44.55	35 34.65	11 10.89	10 9.90	101 100.00

As a simple illustration of this point consider the case of repairs to roof covering which was the most frequent type of repair reported accounting for 12% of the first reported repairs. Respondents were about equally divided between the opinion that the repairs had been necessitated by environmental damage and improper installation, however the distinction between the two may not be all that clear or accurate and thus it would be unwise to attempt to impute differences in quality of the condition of the dwelling from this data.

TABLE 6.1.4

CAUSE OF ROOF PROBLEM BY PROVISIONG SECTOR

```
Cause of Problem

Frequency|  Provisioning Sector
Percent  |
Row Pct  |
Col Pct  |EXPERIEN|INEXPERI|SELF-PRO|INDUSTRY|
         |CED SELF|ENCED SE|VISION  |        |  Total
---------+--------+--------+--------+--------+
environ. |      5 |      2 |      2 |      2 |     11
damage   |  29.41 |  11.76 |  11.76 |  11.76 |  64.71
         |  45.45 |  18.18 |  18.18 |  18.18 |
         |  62.50 | 100.00 |  66.67 |  50.00 |
---------+--------+--------+--------+--------+
improper |      3 |      0 |      1 |      2 |      6
install. |  17.65 |   0.00 |   5.88 |  11.76 |  35.29
         |  50.00 |   0.00 |  16.67 |  33.33 |
         |  37.50 |   0.00 |  33.33 |  50.00 |
---------+--------+--------+--------+--------+
Total           8        2        3        4       17
            47.06    11.76    17.65    23.53   100.00
```

The follow-up study data indicates that there are no significant differences in dwelling quality among the different provisioning sectors. However self-builders undertake more repair activities on their dwelling. It is not clear whether this contradicts the conclusion about equal quality, or if it reflects a higher standard of maintenance, and an enhanced capability to undertake the work. Further discussion of this point appears in Section 7.

7.0 REPAIR AND MAINTENANCE PRACTICES

In Section 5 it was established that maintenance standards and construction skills were enhanced through the process of self-building, and in Section 6 it was shown that there are no significant differences in the quality of the dwellings occupied by the various sectors. It appears the higher level of maintenance, repair and improvement activity by self-builders reflects their standards, skills and knowledge more than the actual quality of the dwellings.

Table 7.0.1 shows the maintenance, repair and improvement activities for all four sectors for different building components. The table contains considerable detail and some guidelines are included here to illustrate how the table can be used. Consider work done on the outside walls of the dwellings (2nd row), it can be seen that experienced self-builders carried out maintenance work on the outside walls 34 times, 29 by themselves and in 5 cases contractors were hired to do the work. By comparison, inexperienced self-builders had maintenance work done to their outside walls 28 times, 7 by contractors and 21 by themselves. Self-provisioners hired contractors to maintain the outside walls 4 times and worked on the walls themselves 7 times, while industry households were equally divided between the two maintenance sectors with work done 3 times by each. Thus, with outside wall maintenance at least, self-builders were far more likely to do the work themselves.

Still looking at the outside walls we can see that repair work was far more likely to be carried out by contractors, as were improvements, even for self-builders.

It should be noted that the follow-up survey also asked how much of the work was done by the households themselves. In almost all

	experienced self-build						inexperienced self-build						self-provisioned						industry					
	maintenance		repairs		improvements		maintenance		repairs		improvements		maintenance		repairs		improvements		maintenance		repairs		improvements	
	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help	# industry	# self help
sitework	.	3	2	1	13	23	.	4	1	1	14	17	.	.	.	2	3	9	.	.	1	.	5	4
outside walls	5	29	3	2	3	3	7	21	4	.	3	1	4	7	.	1	.	.	3	3	3	.	.	.
roof (gutters)	.	3	.	5	1	1	1	1	2	2	3	.	.	2	.	.	3	3	.	.	.	1	.	1
roof covering	.	.	.	10	.	.	.	.	1	3	2	.	.	1	3	1	1	.	.	.	1	3	.	.
chimney	2	6	5	5	1	1	.	2	2	2	1	4	.	3	.	1	2	.	3	1	1	2	2	.
doors/windows(ext)	1	3	8	10	1	5	.	3	7	9	3	4	.	.	4	2	4	1	.	1	1	2	2	4
steps/porches	1	6	.	7	3	19	1	2	.	4	6	14	.	1	.	1	3	3	.	2	.	3	1	3
floor structure	.	.	1	3	1	2	.	.	.	2	1	1	.	.	.	.	.	.	.	.	1	.	.	.
floor covering	1	1	6	2	6	3	1	1	7	4	2	4	.	1	3	.	3	.	.	.	4	.	1	1
walls	4	33	.	2	1	5	4	28	.	1	2	5	3	11	.	.	1	.	1	8	.	.	1	1
doors/windows(int)	.	11	1	4	1	2	.	6	.	1	1	3	.	3	1	1	.	.	.	4	.	1	.	1
shelves/cabinets	.	7	.	2	4	12	.	4	.	.	1	6	.	.	1	.	1	.	.	1	.	.	1	3
lighting fixtures	.	1	.	1	4	3	.	.	1	2	10	4	.	.	.	.	3	.	.	.	.	1	2	2
wiring	.	.	.	.	9	4	.	1	1	.	8	3	.	1	.	.	4	.	.	.	.	.	5	3
furnace	4	3	6	.	4	2	8	2	5	.	1	.	2	.	1	.	3	1	2	.	3	1	2	1
fireplace/stove	1	2	.	4	2	5	.	2	.	1	4	4	.	1	.	.	.	1	.	.	.	.	2	2
ductwork/pipes	.	.	.	1	2	3	1	1	1	.	2	.	.	.	.	.	1	.	.	.	.	.	.	1
pipes	1	.	1	1	2	5	.	.	.	1	4	3	1	1	.	.	2	1	2	.	.	.	.	.
fixtures (sink)	1	2	1	6	3	2	.	3	8	1	1	3	.	.	1	1	.	.	.	2	1	.	2	.
hot water heater	.	.	2	.	1	1	1	.	1	1	2	.	.	.	1	.	1	.	.	.	.	.	.	.
attic insulation	.	.	.	2	2	4	.	.	.	.	3	5	.	.	.	.	.	2	.	.	1	.	1	1
basement insulation	.	.	.	.	.	9	.	.	.	.	2	10	.	.	.	.	2	3	.	.	.	.	2	4
doors/windows insul.	.	.	1	.	2	2	1	.	.	1	1	3	.	.	.	.	.	1	.	.	.	.	2	1

cases the responses were in the 75-100% class regardless of the sector of original provisioning for the dwelling. Thus this data has not been included in the table and readers can assume that where self-help occurs, almost all of the work was done by the household.

Continuing to examine Table 7.0.1, we can see that the outside and inside walls were the most likely building components to attract maintenance activity, and that households were more likely to maintain inside walls themselves than they were the outside walls. The high incidence of repairs to roofs by self-builders (reported in Section 6) also shows up in this table, as does the repair and maintenance to windows. From the qualatative data in the follow-up survey, many of these respondents pointed to problems with one particular brand of window. It appears that this window was popular with local building suppliers and thus was used by a number of self-builders.

It is known from the 1982 survey and other sources that self-builders rely heavily on building suppliers for information on costing and materials, consequently the amount and quality of the information held by suppliers is likely to be a factor influencing the ability of the self-builder to meet quality standards. Similarly it is also important that standards are maintained in materials and system components such as windows. If standards are relaxed then there will likely be a greater impact on self-builders than on industry builders who have more experience, better networks and other sources of information readily available.

Returning to Table 7.0.1, it appears that **there is a greater likelihood of self-help households doing there own maintenance, repair and improvements**. This confirms the findings from Section 5 where the higher standards and improved capabilities of self-help households was noted, and from Section 6 where this higher incidence of repair activity was first reported (Table 6.1.2).

It also appears from Table 7.0.1 that **within self-help there is more activity on self-built dwellings than on self-provisioned dwellings**. As discussed in Section 6, it is not clear whether this reflects a greater need for work, or a greater appreciation of the need combined with a greater ability to do the work oneself. Given that there are no identifiable differences in the quality of the dwellings produced by the different strategies, it is likely the higher level of activity reflects greater awareness and construction skills of self-help households. This would be consistent with the greater likelihood of improvements by self-builders since improvements are not associated with quality of the original work. This would imply then that the industry dwellings might be insufficiently maintained. It would also lend further weight to Turner's argument that not only are self-help households better able to maintain their dwelling, but also that this will have an overall advantageous impact on the quality and durability of the housing stock.

This discussion of the repair and maintenance practices by the different sectors has only focused on the issue of whether one of the general advantages of self-help is that the households are more likely to maintain their dwelling. This finding has been confirmed by the 1989 study. It has been noted that self-builders are more likely to do the necessary work themselves perhaps because it is more affordable if all or part of the work is done by the household itself.

8.0 AFFORDABILITY

Housing affordability problems were most common in 1982 with industry-provisioning and it has been argued that this was one of the advantages of self-help, partially due to the lower construction costs. It is thus interesting to have the opportunity to examine affordability several years later.

By the time respondents were interviewed in 1989 there were very few affordability problems remaining. In part this is because a number of households with affordability problems in 1982 had sold their dwelling, but in most cases it was because the problem had been resolved in the intervening period.

This section first identifies the extent of affordability problems and then describes the process whereby these have been resolved.

8.1 Extent of Affordability Problems

In this report a distinction is made between affordability need, a concept used to plan and allocate social housing in Canada[26], and affordability problems intended as an indicator of real or potential difficulties households might have paying for their accommodation. Affordability need refers to the ratio of mortgage payments to gross household income, and need is said to exist where this ratio exceeds 0.30[27]. Affordability problems take the ratio of all principal, interest and tax payments to gross household income, and where the ratio exceeds 0.25, a problem is likely to exist. The ratios used in both measures are arbitrary, and it is difficult to defend either. The 0.25 ratio used to identify housing problems is a 'guess' adjustment from the need measure for the additional payments included in the concept. In addition to the measure of affordability problem (GDS82 and GDS89) presented in Table 8.1.1, the ratios of the amount financed to 1989 value and 1982 costs to occupancy are also presented

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[26] I have developed an alternative measure of affordability and this is discussed in DPA et al (1988) and NORDCO (1988).

[27] In social housing allocation this is then controlled in an effort to ensure that the affordability problem is not 'voluntary'.

TABLE 8.1.1

MEAN VALUES FOR AFFORDABILITY PROBLEMS AND PROPORTION OF DWELLING VALUE FINANCED BY PROVISIONING SECTOR

AFFORDABILITY PROBLEMS

N Obs	Variable	Label	Mean
Experienced Self-Build			
58	GDS289	GROSS DEBT SERVICE ALL PYMNTS 1989	0.0659388
	GDS2	GROSS DEBT SERVICE ALL PYMNTS 1982	0.1345651
Inexperienced Self-Build			
46	GDS289	GROSS DEBT SERVICE ALL PYMNTS 1989	0.0911776
	GDS2	GROSS DEBT SERVICE ALL PYMNTS 1982	0.2291195
Self-Provision			
17	GDS289	GROSS DEBT SERVICE ALL PYMNTS 1989	0.0535911
	GDS2	GROSS DEBT SERVICE ALL PYMNTS 1982	0.1920740
Industry			
12	GDS289	GROSS DEBT SERVICE ALL PYMNTS 1989	0.1463657
	GDS2	GROSS DEBT SERVICE ALL PYMNTS 1982	0.2358234

PROPORTION OF VALUE FINANCED

Variable	N	Minimum	Maximum	Mean	Std Dev
Experienced Self-Build					
PCTFIN89	57	0	.7777778	0.1526861	0.2164709
PCTFIN82	56	0	2.0000000	0.2435860	0.4027689
Inexperienced Self-Build					
PCTFIN89	45	0	.7333333	0.1449833	0.1945819
PCTFIN82	44	0	.9111111	0.2373578	0.3049187
Self-Provision					
PCTFIN89	15	0	.5000000	0.1162232	0.1840129
PCTFIN82	15	0	0.7250000	0.1744119	0.2748732
Industry					
PCTFIN89	12	0	0.5882353	0.2649874	0.2300323
PCTFIN82	11	0	0.7142857	0.3283183	0.3025446

Industry-built dwellings are still the least affordable in 1989, however there was a significant improvement in affordability for all of the sectors including industry-provisioning where the ratio of all payments to current income fell from 0.236 to 0.146. This improvement by 9% is significant, however it is a lower level of improvement than was achieved by inexperienced self-builders and self-provisioning (both about 14%). This improved affordability is quite dramatic and is discussed further below.

The lower the proportion of the total value of the dwelling which is financed, the more secure hold the household has on their dwelling, and the less likely they are to lose their dwelling or experience hardship in the event of unanticipated events[28]. Thus the second group of measures presented in Table 8.1.1 is also an important indicator of the affordability of accommodation. PCTFIN89 is the ratio of outstanding principal on all housing debt to the market value of the dwelling in 1989, PCTFIN82 is the same ratio for 1982.

Once again, self-provisioning is the most secure, followed by the self-builders, with industry-provisioning at greatest risk. The ranking has not changed since 1982, although the improvement for self-builders (about 9%) was greater than for the other two categories (about 6%).

There were only 4 respondents in 1989 who had an affordability ratio in excess of 0.25: 2 self-builders and 2 industry households. Since there were 64 households with an affordability problem in 1982, **there has been a dramatic reduction in the number of affordability problems amongst the sample population.** This is discussed further in the following sub-section which looks at changes in affordability since 1982. Included in this will be further examination of the general improvement in affordability noted above.

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[28] Such as the closure of a military base as has happened in Summerside recently.

8.2 Changes in Affordability Since 1982

In order to begin to look at changes in affordability since 1982 we first select the 21 households who had an affordability problem in 1982. Table 8.2.1 shows changes from 1982 in GDS ratios, percentage financed and income, as well as showing responses to a question about changes in financing arrangements since 1982.

TABLE 8.2.1

SELECTED AFFORDABILITY INDICATORS FOR HOUSEHOLDS WITH AN AFFORDABILITY PROBLEM IN 1982

OBS	GDS82	GDS89	PCTCGFIN	CGINCOME	CGVALUE	CHNGFIN
Experienced Self-Builders						
1	0.35837	0.15815	0.15556	8400	15000	extra renovation
2	0.29468	.	.	.	-4500	retired debt
3	0.67279	0.15000	0.17000	6000	10000	no change
4	0.30633	0.00000	.	13000	5000	no change
5	0.41518	0.00000	.	.	15000	no change
6	0.25879	0.19080	1.07077	14500	40000	extra other reason
7	0.53495	0.00000	.	35000	20000	no change
Inexperienced Self-Builders						
8	0.49031	0.00000	.	11500	50000	no change
9	0.35485	0.00000	.	10000	27000	no change
10	0.27272	0.14400	0.15000	11000	50000	no change
11	0.25494	0.00000	.	35500	15000	retired debt
12	0.39551	0.20880	0.02807	9000	20000	no change
13	0.67659	0.14945	0.27692	10000	30000	no change
14	0.27997	0.11787	0.45378	34000	36000	no change
15	2.89676	0.20571	-0.04696	20000	-15000	no change
Self-Provision						
16	0.27341	0.204	0.32222	4400	32000	no change
17	0.25582	0.000	.	8000	20000	retired debt
18	1.20165	0.000	.	9300	0	retired debt
Industry						
19	0.42492	0.41400	0.16667	5000	15000	no change
20	0.36051	0.24891	0.12605	16000	15000	extra other reason
21	0.37010	.	.	.	37000	missing

This is a very interesting group since at the time they first obtained their dwelling most would not have been considered appropriate for homeownership because their shelter-to-income ratio exceed 0.30. Yet all but one or two households (#19,20) would now likely have acceptable shelter to income ratios. And, judging by the final column where any changes in the original financing arrangement are reported, most of the improvements have occurred without a special adjustment in financing. Indeed, in 3 cases, extra money was obtained from the equity in the dwelling.

Table 8.2.1 also shows the change in the percentage of the dwelling's value which is encumbered by debt (PCTCGFIN), and the changes in income (CGINCOME) and dwelling value (CGVALUE) from 1982 to 1989. Changes in income can influence the GDS ratios, an increase in income will reduce the ratio, thus for cases such as numbers 7,11,14 and 15 the substantial increases in income which occurred are likely the reasons for the decline in their GDS ratios. Similarly the substantial increase in the value of the dwellings owned by numbers 6,8,13,14,16, and 21 affect the ratio of debt to the value of the dwelling. What can be concluded from the information presented in Table 8.2.1 is there are a number of factors influencing the changes in the affordability and level of indebtedness of households. The significant reduction in the number of households with affordability problems did not appear to have required any special effort by the household.

This improvement in affordability and in the level of indebtedness was probably eased by the relatively favourable market conditions which have prevailed in P.E.I. during the 1982-89 period. If such market conditions can be safely assumed, then housing programs which defer payments for the first few years in anticipation of rising incomes and values can be effective in improving access to homeownership. However if market shocks do occur, as in P.E.I. recently with the closure of the Summerside airbase, then initially high GDS ratios and levels of indebtedness could prove disastrous. Thus, while almost all of the affordability problems were eliminated with the favourable market conditions, the higher levels of security obtained by self-help (see Section 8.1 above) are an important buffer in markets where the probability of unemployment and of other negative factors are greater.

An additional 28 households who had affordability problems sold their dwellings prior to 1989. 18 of these were self-help and 10 were industry households. While it is not possible to determine whether the decision to sell was precipitated by the affordability difficulties, it does seem unlikely that this was the case given the changes in affordability noted above and the evidence presented in Section 4.

8.3 Summary

It appears as if the relatively buoyant market conditions prevailing in P.E.I. during 1982-89 have contributed to the elimination of almost all of the affordability problems in the sample population. Self-help households benefitted most. They began the period with lower levels of indebtedness and lower gross debt service ratios, and experienced greater reductions in both measures over the buoyant period. This likely occurs because of the greater use of non-mortgage financing and the lower levels of initial indebtedness which are features of self-help. **In terms of affordability then, self-help performs better than industry provisioning even during buoyant times**. Self-help is also certain to perform better during hard times with the lower debt and repayment loads.

9.0 EVALUATION OF SUITABILITY

Suitability is the last of the three elements used to measure housing need, the other two being adequacy and affordability. Until recently CMHC used a simple one person per room standard to evaluate suitability. However it was argued that this did not always provide sufficient privacy for household members and that a National Occupancy Standard (NOS) should be adopted. NOS is now the standard used by CMHC. In this report NOS is also used, however for comparison purposes suitability has also been evaluated according to the older standard of one person per room.

TABLE 9.0.1

COMPARISON OF CROWDING MEASURES BY PROVISIONING SECTOR

```
Sector of Provisioning
Frequency| Old Crowding Standard
Percent  |
Row Pct  |no
Col Pct  |crowding|crowding|  Total
---------+--------+--------+
Experien.|     56 |      2 |     58
Self-    |  42.11 |   1.50 |  43.61
Build    |  96.55 |   3.45 |
         |  43.41 |  50.00 |
---------+--------+--------+
Inexp.   |     44 |      2 |     46
Self-    |  33.08 |   1.50 |  34.59
Build    |  95.65 |   4.35 |
         |  34.11 |  50.00 |
---------+--------+--------+
Self-    |     17 |      0 |     17
Provision|  12.78 |   0.00 |  12.78
         | 100.00 |   0.00 |
         |  13.18 |   0.00 |
---------+--------+--------+
Industry |     12 |      0 |     12
         |   9.02 |   0.00 |   9.02
         | 100.00 |   0.00 |
         |   9.30 |   0.00 |
---------+--------+--------+
Total         129        4      133
            96.99     3.01   100.00
```

```
 Provisioning Sector
Frequency|   NOS Crowding
Percent  |
Row Pct  |no
Col Pct  |crowding|crowding|  Total
---------+--------+--------+
Experien.|     55 |      2 |     57
Self-    |  41.67 |   1.52 |  43.18
Build    |  96.49 |   3.51 |
         |  43.31 |  40.00 |
---------+--------+--------+
Inexp.   |     44 |      2 |     46
Self-    |  33.33 |   1.52 |  34.85
Build    |  95.65 |   4.35 |
         |  34.65 |  40.00 |
---------+--------+--------+
Self-    |     16 |      1 |     17
Provision|  12.12 |   0.76 |  12.88
         |  94.12 |   5.88 |
         |  12.60 |  20.00 |
---------+--------+--------+
Industry |     12 |      0 |     12
         |   9.09 |   0.00 |   9.09
         | 100.00 |   0.00 |
         |   9.45 |   0.00 |
---------+--------+--------+
Total         127        5      132
            96.21     3.79   100.00
```

As can be seen from the above tables there is a difference between the two crowding standards, but that even when the higher NOS standard is used, **there is very little crowding amongst the sample population.** Less than 4% of the dwellings are crowded, and, most of these are only short one room.

In addition to meeting the National Occupancy Standards, it is also important that dwellings are suited to any special needs of the occupants. Thus dwellings should, if necessary, meet the needs of the disabled. There were 6 disabled residents in the 1989 survey, an increase of 4 from the 1982 results.

TABLE 9.0.2

HOUSEHOLDS WITH SPECIAL NEEDS

OBS	Dwelling OK?	Sector	CROWDNOS	GDS89	Value Dwelling	H'Hold Income
1	Yes	S/B Exp	No	0.00	100000	42000
2	Yes	S/B Inx	No	0.60	150000	30000
3	Yes	S/B Exp	No	0.00	85000	70000
4	Yes	S/B Inx	No	0.15	65000	22000
5	Yes	S/B Inx	No	0.00	100000	30000
6	No	S/B Exp	No	0.00	70000	10000

As can be seen from Table 6.0.2, only one of the dwellings occupied by a household with special needs requires modification (#6) and there are neither affordability problems nor crowding in any of the dwellings. All of the dwellings occupied by persons with disability problems were self-built, half by households with previous experience.

While the age of the person with special needs is not known, all but the household requiring modifications to their dwellings are couple-headed and between 32 and 46. In addition all but household #6 have children. Household #6 is an elderly couple (both 75) who live alone. Thus both were 67 when they built their own dwelling but now may be too old to carry out the necessary modifications themselves. Their income is probably too low to be able to hire a contractor if the necessary modifications involve much in the way of expense, and they are thus likely to require public assistance.

All but one of the suitability problems were self-builders, and the other was a self-provisioner. Four of the 7 crowding problems (by NOS standards) occurred without any change in family size. Of the other 3 households, 2 increased by one person and the other by 3 people. The average size of the four households who were crowded from the outset was 7 (ranging from 5 to 8). Given aging of children of mixed sexes it is not surprising that some crowding does occur with large families. While it is possible that better advance planning might have made provision for these future requirements, this could be true of a large proportion of households, regardless of location or provisioning sector.

10.0 RESPONDENTS EVALUATION OF THEIR PROVISIONING EFFORT

In this section we turn to the respondents evaluation of their efforts in obtaining a dwelling. In 1982 respondents were asked how they could have been better helped and what problems they had in obtaining a dwelling. One of the questions which was addressed in the follow-up survey was again, what they thought of the process and whether they could now do better. The 1982 and 1989 data thus provides the basis for an evaluation of the provisioning process by the respondents.

There are three elements: their overall evaluation of the effort, problems they encountered, and how they think that they could do better if they were to do it again. Each of these elements is addressed in seperate sub-sections.

10.1 Respondents Overall Evaluation of Their Effort

Most of the respondents would use the same provisioning strategy again: only 14 of 121 (11.5%) answering this question said that they would use another strategy. Those who would use another strategy were about the same proportion from each sector. The principal reason why self-builders would use another strategy the next time was that self-building was too much trouble and took too much time. Although about the same proportion of self-providers and industry households said that they would now use a different strategy, the absolute numbers are too small to be able to comment on the reasons why they would do so.

Self-builders appear to have been most influenced by the savings available with this form of provisioning, and the control it gives over quality. Generally it was considered to be a good method so long as a household has the time and the skills. Self-provisioning households were most concerned with control over design and this may have been a critical factor for those who considered purchasing an industry dwelling as their first alternative. Several self-provisioners and industry-purchasers felt that their 'circumstances' (undefined) led to their original selection.

10.2 Respondents Evaluation of The Specific Tasks

Most of the respondents showed a high degree of satisfaction with their own efforts. They were asked to rate their performance on a 7-point scale (with a score of 1 labelled 'very badly' and a 7 as 'perfect') for the following tasks: planning, costing, management, coordination, own work, family responsibilities, and getting things done on schedule.

Industry households did not rate their performance as highly as did the other sectors except in areas such as costing, management and scheduling which are obviously less difficult for them in comparison to the other sectors. Experienced self-builders felt that they did better than inexperienced self-builders in planning, costing, and the quality of their own work; while the inexperienced self-builders thought that their performance in the areas of coordination, management and handling other family responsibilities was better. However, self-provisioning households rated themselves higher than either of the self-build categories in terms of planning, costing, management, coordination and scheduling.

When asked to rank the problems they had in getting their home, self-builders were 5 times as likely to select 'getting enough time' as their major problem as they were any of the other options. For the remainder of the options, problems encountered in obtaining land, materials, financing, costing and organisation were almost equally mentioned by self-builders. Problems with design, permits and organisation were the most frequently cited as being the second most important problem for self-builders. Self-

TABLE 10.2.1

MAJOR PROBLEMS IN PLANNING CITED IN 1982

Frequency Percent Row Pct Col Pct	PROVISIONING SECTOR Exper Self-Bld	Inexp Self-Bld	Self-Provis	Industry	Total
Yes-planning	13 9.77 38.24 22.41	12 9.02 35.29 26.09	6 4.51 17.65 35.29	3 2.26 8.82 25.00	34 25.56
No-planning	45 33.83 45.45 77.59	34 25.56 34.34 73.91	11 8.27 11.11 64.71	9 6.77 9.09 75.00	99 74.44
Yes-site	7 5.26 29.17 12.07	12 9.02 50.00 26.09	3 2.26 12.50 17.65	2 1.50 8.33 16.67	24 18.05
No-site	51 38.35 46.79 87.93	34 25.56 31.19 73.91	14 10.53 12.84 82.35	10 7.52 9.17 83.33	109 81.95
Yes-const.	21 15.79 46.67 36.21	18 13.53 40.00 39.13	5 3.76 11.11 29.41	1 0.75 2.22 8.33	45 33.83
No-const.	36 27.07 42.35 62.07	27 20.30 31.76 58.70	12 9.02 14.12 70.59	10 7.52 11.76 83.33	85 63.91
Yes-financing	9 6.77 45.00 15.52	7 5.26 35.00 15.22	3 2.26 15.00 17.65	1 0.75 5.00 8.33	20 15.04
No-financing	48 36.09 42.86 82.76	39 29.32 34.82 84.78	14 10.53 12.50 82.35	11 8.27 9.82 91.67	112 84.21
Yes-other	8 6.15 47.06 14.04	3 2.31 17.65 6.82	3 2.31 17.65 17.65	3 2.31 17.65 25.00	17 13.08
No-other	49 37.69 43.36 85.96	41 31.54 36.28 93.18	14 10.77 12.39 82.35	9 6.92 7.96 75.00	113 86.92

providers and industry households apparently did not encounter very many problems.

In 1989 the questions about the problems that the respondents experienced in the course of getting theri dwelling were more specific than in 1982. As a reference the 1982 results appear as Table 10.2.1. It appears that the recollection of the experience has faded or that the respondents have gained a different perspective on the process. In 1982 many households reported that they encountered 'major problems' in the process of getting their dwelling. These problems were not limited to the self-build sector as suggested by the 1989 results. Indeed self-provisioners were as likely to report major problems in construction and financing as were self-builders. Not surprisingly, industry households reported a lower level of major problems in all categories in 1982.

It is possible that access to many of the necessary steps in the process of producing a dwelling are not readily accessible to self-builders. For example, self-builders might find the process of permits and obtaining planning permission more difficult than would residential contractors. Yet self-help is the principal form of new dwelling provision. This suggests that in markets where self-help is so important, there is considerable room for improvement in many of the steps which must be taken in the successful production of a new dwelling.

In general, self-builders were far more likely to encounter problems, and this was true in both the original survey and in the follow-up. It is thus interesting to look at their attitudes towards training.

10.3 Responding Households Interest in Training

About 40% of all the households and half of the self-builders would be interested in taking courses if they were offered, and most of the respomdemts would expect to pay for such courses. Experienced self-builders are less interested than are inexperienced self-builders who appear quite willing to pay $50-100 for training.

TABLE 10.3.1

1989 RESPONDENTS VIEWS TOWARDS TRAINING IN CONSTRUCTION SKILLS

Frequency Percent Row Pct Col Pct	Provisioning Sector				
	Exper Self-Bld	Inexp Self-Bld	Self-Provis	industry	Total
would not take a course	35 28.00 47.30 64.81	20 16.00 27.03 45.45	11 8.80 14.86 68.75	8 6.40 10.81 72.73	74 59.20
would take a course if free	2 1.60 50.00 3.70	2 1.60 50.00 4.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 3.20
would pay up to $50	5 4.00 25.00 9.26	11 8.80 55.00 25.00	3 2.40 15.00 18.75	1 0.80 5.00 9.09	20 16.00
would pay $51-100	7 5.60 43.75 12.96	7 5.60 43.75 15.91	1 0.80 6.25 6.25	1 0.80 6.25 9.09	16 12.80
would pay $101-250	4 3.20 44.44 7.41	3 2.40 33.33 6.82	1 0.80 11.11 6.25	1 0.80 11.11 9.09	9 7.20
would pay $251-500	1 0.80 50.00 1.85	1 0.80 50.00 2.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.60
Total	54 43.20	44 35.20	16 12.80	11 8.80	125 100.00

Given the interest in training by 41% of the 1989 respondents it is useful to look at the types of courses that are desired. Inexperienced self-builders expressed the strongest interest in taking specific courses and their greatest interest was in carpentry and construction management (about 47% would take such courses). The other two self-help categories would also be very likely to take courses: experienced self-builders in carperntry (26%), plumbing (25%) and construction management (23%), and self-provisioners in construction management (31%) and plumbing, electrical and carpentry (about 18%).

It appears as though the self-help process demonstrated to the households the areas where they could improve if they were to do it again. Thus self-provisioning, which is principally a management process, demonstrated most strongly to these households that an improvement in their management skills would be useful. On the other hand, inexperienced self-builders also became more aware of their deficiencies in areas such as carpentry and construction management, the area they participated in most often. These findings suggest that courses offered should be based on what households are most likely to need given the form of self-help occurring in the local area. This might imply local or regional differences in courses: for example, in P.E.I. it might be best to offer management courses for self-provisioners in the Charlottetown area, and management and construction skill courses for self-builders in the other areas.

Almost all self-helpers expressed considerable interest in training and this appears to reflect the learning process of the construction project. This implies that there might well be a willingness to seek training by households who are seriously anticipating building a house.

10.4 Summary

There is a high level of satisfaction with the provisioning strategies that households used, and a strong likelihood that most would use the same strategy again. Many households encountered some problems in the process of obtaining their dwelling and this might be a factor in the general recognition that they could have improved their performance. Training courses appear to be one option for this since there appears to be an openness to these, and the types of courses which households would take appear to be consistent with the types of activities they were engaged in. At the same time, in areas where self-help is an important form of housing provisioning, it might be useful for administrative agencies to assess the accessibility of their processes to individual households.

11.0 CONCLUSIONS

There has been a growing recognition of the importance of self-help housing in Canadian housing markets, and of the possibilities that this sector of housing provision has for improving housing conditions. The research reported on here is one of a growing number of initiatives which have come from this increasingly sympathetic environment.

Because self-help housing provision has not received much attention in the past there are a number of important questions about self-help which must be addressed.

The first group of questions concerns the selection of self-help as a provisioning strategy. Questions associated with this are related to the importance of construction skills in self-help, and the effect that self-help provisioning has upon maintenance and repair of the dwelling once it is completed.

The report proposes that construction skills are quite important. Two classes of self-builders were identified: those with considerable prior construction experience and those with little prior experience. It was found that if a household does have prior experience they will likely select a self-help provisioning strategy.

Inexperienced self-builders ranked their own construction skills more highly than did self-provisioners and industry households. Thus self-building appears to be selected by households who either have prior experience or who believe that they can successfully do the work. Given that the quality of the dwellings produced by self-builders is indistinguishable from the other sectors, this belief appears to be well founded.

If inexperienced self-builders are stratified by those who have previously owned a dwelling and those who have not, it is noted that the latter are much younger and at an early stage of family formation. Given the prevailing market and employment conditions, self-building is the most accessible means of getting a first house for these younger households who build smaller and less expensive dwellings. Since once they have experience they are likely to self-build again, this group represents the new recruits to the self-building process.

As already mentioned, the dwellings produced by the different sectors are indistinguishable from each other in terms of quality. However, households who self-built appear to have experienced a greater improvement in construction skills than did households using the other sectors. In addition, they felt that their standards have also improved. This confirms some important arguments in favour of self-help which propose the benefits of self-help extend well beyond the initial provisioning process and will be realised in a better maintained and more affordable housing stock. Indeed, self-builders undertook more maintenance, repair and improvement activity than the other sectors, and were more likely to do the work themselves. It was suggested that this likely implies that self-builders maintain their dwellings to a higher standard.

A number of changes were noted in the P.E.I. sample since the original survey was conducted in 1982. The most dramatic of these was that a third of the dwellings built between 1878 and 1981 had been sold by 1989, and that industry households were twice as likely to have moved as self-help households. Examination of these sales indicates that it is very unlikely that they were in response to either of two obvious inducements: either to capture potential capital gains, or because the household was having difficulty affording their accommodation. In earlier work it had been noted that households with construction skills were significantly overepresented among new homeowners in P.E.I., and it was suggested that these households might be adopting a strategy of converting their underemployed labour into wealth through a cycle of building, occupying and then selling a dwelling every few years. This proposition was not borne out in the follow-up survey. Almost all of the households with construction skills still occupied their dwellings despite the fact that a third of all households had sold their dwellings.

There has also been a significant reduction in affordability problems in the 1982-1989 period, and a reduction in the proportion of the dwelling which is encumbered by debt. In most cases these improvements have been achieved without any special actions such as lump-sum payments on mortgage principal or loan amounts. The level of security, represented by lower debt burdens and lower levels of encumberance, was highest for self-builders in 1982, and the position of this class improved greatest over the intervening period. This suggests that self-building produces more affordable housing, and, compared to industry housing the level of affordability is more likely to improve under both good and bad market conditions.

Using selected indicators, few suitability problems were found in the sample population. Most which did exist were with large self-building families who did not have enough space when they originally moved into their dwelling. In fact, the level of housing need is very low for the sample population, and this is equally true for all of the provisioning sectors equally.

There was a very high degree of satisfaction with the provisioning strategy which was used and most households would use the same strategy again. This does not mean, however, that problems were not encountered, nor that the households feel their experience could not be improved upon. Indeed a quarter of self-help households would take courses if they were available. It appears households would welcome state initiatives such as promoting training for self-help, as well as measures to ease some of the planning and administrative aspects of building and to ensure that information on design, materials and methods is more readily available. It is also important that the quality of pre-built building components is monitored and maintained.

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APPENDIX 1

FOLLOW-UP STUDY SURVEY INSTRUMENT

SURVEY INSTRUMENT FOR PRINCE EDWARD ISLAND RESIDENTIAL FINANCING AND CONSTRUCTION FOLLOW-UP SURVEY

NOVEMBER, 1989

ANDY ROWE
CONSULTING ECONOMIST
93 BOND STREET
ST. JOHN'S, A1C 1T3

ID NUMBER ¦__¦__¦__¦__¦

IN THIS FIRST SECTION WE WANT TO MAKE CERTAIN THAT WE ARE TALKING TO THE CORRECT HOUSEHOLD.

1. Do you own this house?
Yes...........................1
No............................2 (Is the owner available?)

2. Were you the first people to occupy the house after it was built?
Yes...........................1
No............................2 (Is the first occupant available?)

3. What year did construction start on this house?
1978..........................1
1979..........................2
1980..........................3
1981..........................4
Other (please specify)______..5
Don't Know....................6

4. Had you ever owned a dwelling previous to this house?
Yes...........................1
No............................2

5. Do you own any other dwellings?
Another home..................................1
Summer cottage................................2
Other dwelling (please specify)_______________..3
No other dwelling.............................4

IN THIS NEXT SECTION WE DEAL WITH THE MAJOR FEATURES OF YOUR HOUSE

6. Is there a separate apartment in this dwelling?
Yes...........................1
No............................2

7. How many rooms are there in the house? (Include kitchen, living/dining rooms, bedrooms and any finished attic or basement rooms. Do not count bathrooms, halls, vestibules, laundry room, unfinished rooms and rooms used solely for business purposes, or rooms used by another household.)
Number of Rooms ¦__¦__¦

8. How many bedrooms are there in the house? (ie. those rooms used regularly for sleeping).

Number of Bedrooms |__|__|

9. How many full bathrooms does your house have? (A full bathroom is a room with a flush toilet, bathtub or shower, and a washbasin with piped water).

Number of Complete Bathrooms |__|__|

10. How many half bathrooms does your house have? (A half bathroom is a room with a flush toilet and a washbasin with piped water or a room with a bathtub or shower.)

Number of Half Bathrooms |__|__|

NEXT ARE SOME QUESTIONS TO HELP US OBTAIN A DESCRIPTION OF THE CONDITION OF YOUR DWELLING AND OF ANY RENOVATION OR REPAIR WORK YOU MIGHT HAVE DONE TO YOUR DWELLING

11. Is this dwelling in need of any repairs? Do not include desirable remodelling, additions, conversions or energy improvements).

Yes, Major Repairs Needed (to correct, for example, corroded pipes, damaged electrical wiring, sagging floors, bulging walls, damp walls and ceilings, crumbling foundation, rotting porches and steps)..............................1

Yes, Minor Repairs Are Needed (to correct, for example, small cracks in interior walls and ceilings, broken light fixtures and switches, leaking sink, cracked or broken window panes, some missing shingles or siding, some peeling paint)...2

No, Only Regular Maintenance Is Needed (for example, painting, leaking faucets, clogged gutters or eavestrough)....................................3

12. Please rate the dwelling's present physical condition on each of the following scales.

	Beyond Repair			Minimum Acceptable			Perfect Condition	DK/NA
Sitework (eg driveway, plantings, fencing)	1	2	3	4	5	6	7	9
Outside Walls	1	2	3	4	5	6	7	9
Roof (eg gutters, downspouts, shingles)	1	2	3	4	5	6	7	9
Chimney	1	2	3	4	5	6	7	9
Doors, Windows	1	2	3	4	5	6	7	9
Attached Structures (eg steps, porches)	1	2	3	4	5	6	7	9
Finished Carpentry (eg. cupboard doors, shelves, cabinets)	1	2	3	4	5	6	7	9
Flooring (eg hardwood, carpet tile)	1	2	3	4	5	6	7	9
Drywall/Plaster	1	2	3	4	5	6	7	9
Wall Surfaces (eg paint, paper, tiling)	1	2	3	4	5	6	7	9
Electrical (eg lighting fixtures, wiring)	1	2	3	4	5	6	7	9
Heating (eg furnace, base-board radiators, fireplace)	1	2	3	4	5	6	7	9
Plumbing (eg pipes, fixtures)	1	2	3	4	5	6	7	9
Insulation (eg attic, walls, doors, windows)	1	2	3	4	5	6	7	9
Other (please specify)______________	1	2	3	4	5	6	7	9
____________________________________	1	2	3	4	5	6	7	9

13. When did you complete your dwelling? (Do not include any additions or modifications subsequent to the originally planned dwelling).

Before 1982................1
1982.......................2
1983 to 1985...............3
1986 to 1988...............4
1989.......................5
Not yet complete...........6

14. Have you added to your original dwelling since completing it? (Additions must be attached to the original dwelling, increase the total floor area and not planned as part of the original construction project).

Yes........................1
No.........................2

15. Since completing your dwelling have you done any maintenance repairs or improvements?

Yes........................1
No.........................2 **(GO TO #18)**

16. This question lists a number of building items. For each we would like to know if you have done any work since completing your dwelling and how that work was done. (If they have had more than one type of work done repeat the item under 'other').

First we will deal with the exterior of the dwelling.

	Work Done				How Work Done				
Sitework (Driveway/planting/ fencing)	1	2	3	9	1	2	3	4	5
Outside Walls - Structural	1	2	3	9	1	2	3	4	5
Outside Wall Finish	1	2	3	9	1	2	3	4	5
Roof (gutters/downpipes)	1	2	3	9	1	2	3	4	5
Roof Covering (eg shingles)	1	2	3	9	1	2	3	4	5
Chimney	1	2	3	9	1	2	3	4	5
Doors/Windows	1	2	3	9	1	2	3	4	5
Steps/Porches	1	2	3	9	1	2	3	4	5
Other__________________	1	2	3	9	1	2	3	4	5
Other__________________	1	2	3	9	1	2	3	4	5

Now we will ask about the interior of your dwelling.

Floor Structure	1	2	3	9	1	2	3	4	5
Floor Covering	1	2	3	9	1	2	3	4	5
Walls	1	2	3	9	1	2	3	4	5
Doors/windows	1	2	3	9	1	2	3	4	5
Shelves/cabinets	1	2	3	9	1	2	3	4	5
Other__________________	1	2	3	9	1	2	3	4	5
Other__________________	1	2	3	9	1	2	3	4	5

Finally, we will ask abut the mechanical systems in your house such as plumbing and electricity.

Electrical									
Lighting Fixtures	1	2	3	9	1	2	3	4	5
Wiring	1	2	3	9	1	2	3	4	5
Heating									
Furnace	1	2	3	9	1	2	3	4	5
Fireplace/Woodstove	1	2	3	9	1	2	3	4	5
Ductwork/Pipes	1	2	3	9	1	2	3	4	5
Plumbing									
Pipes	1	2	3	9	1	2	3	4	5
Fixtures (sink, etc.)	1	2	3	9	1	2	3	4	5
Hot Water Heater	1	2	3	9	1	2	3	4	5
Insulation									
Attic or walls	1	2	3	9	1	2	3	4	5
Basement	1	2	3	9	1	2	3	4	5
Doors/Windows	1	2	3	9	1	2	3	4	5
Other (please specify)									
________________	1	2	3	9	1	2	3	4	5
________________	1	2	3	9	1	2	3	4	5

WORK DONE

1 Maintenance (work done to keep a building in its current physical condition).

2 Repairs, Replacements (work done to improve physical safety and soundness by fixing or repairing weak, worn-out or damaged parts of a building).

3 Improvements (work done to upgrade or expand a building).

HOW WORK DONE

1 Hired a Contractor or Trades-persons and they did all the work.

2 Provided up to 25% of the work myself, or with family and friends.

3 Provided 26-50% of the work myself, or with family and friends.

4 Provided 51-75% of the work myself, or with family and friends.

5 Provided over 75% of the work myself, or with family and friends.

17. If you did repairs to your house, could you tell us why these were necessary? (Refer to the first column of #16).

____
____
____
____

18. In retrospect, is there anything that you wished that someone had told you or that you had somehow known before you acquired your dwelling?

No......................................1
Yes.....................................2 **What were they?**
____
____
____

WE WOULD NOW LIKE TO ASK YOU SOME QUESTIONS ABOUT THE CONSTRUCTION OF YOUR HOUSE.

19. Which of the following best describes how your dwelling was constructed?

1. Bought the completed dwelling from a builder or developer..1
2. Had a contractor build the house on my land................2
3. Had a pre-built or kit home assembled on my land...........3
4. Built a kit home myself.....................................4
5. House was built with some or all of my labour and by subcontractors who I hired...5

20. What was the most important and second most important factor influencing your construction decision?

First most important factor________________________________
____
____

Second most important factor_______________________________
____
____

21. Looking back, would you have selected a different construction strategy if you had it all to do over again? If so, which of the options should you have selected? (Place number from question #19 in the space provided).

No, I would use the same option again....1
Yes, I would use a different option......2 and it would be¦__¦

22. Why would you select this option now?

____

____

____

23. Which of the following did you use as the principal source of financing for your dwelling when you first moved in? (By principal source we mean the one which provided the most money).

Mortgage...1
Bank loan..2
Savings..3
Proceeds from the sale of a former house...............4
Proceeds from the sale of land or some other asset.....5
Insurance claim, inheritance or similar one-off sum....6
Other (please specify)_____________________________...7

24. What was the most important and second most important factor influencing your financing decision?

First most important factor_____________________________

____

____

Second most important factor____________________________

____

____

25. If you went to a financial institution such as a bank, trust company or credit union for financing for your house, were you turned down? If so how many times and what were the reasons you were given?

Didn't try...........................1
Tried and was not turned down........2
Tried and was turned down............3 |__| times.

Reasons given____

____

____

26. Did you obtain short-term financing for the construction of your house which you paid off later with financing from another source?

Yes......................1
No.......................2 (GO TO #28)

27. How difficult was it to get access to short-term financing?
Very difficult.............1
Somewhat difficult..........2
Difficult...................3
Not very difficult..........4
No difficulty at all........5

28. If you had the chance to do it all over again would you have selected a different financing strategy? If so, which of the options should you select and why would you now select that option? (Place number from question 23 in the space provided).
No, I would use the same option............1
Yes, I would use a different option........2 and it would be |__|
Why____
____
____

29. Who arranged the financing for the house?
Respondent.........................1
Spouse.............................2
Respondent and spouse together....3
Other (please specify)__________..4

30. Who kept a record of the expenses associated with the construction or purchase of the house, and who actually made the payments? (ie, who made out the cheques, not whose bank account did the money come from.)
Respondent.......................................1
Spouse...2
Shared between respondent and spouse.............3
Other (please specify)_______________________.......4
Not applicable...................................9

WE WOULD LIKE TO GET SOME IDEA OF THE CONSTRUCTION SKILLS THAT PEOPLE HAVE, AND HOW IMPORTANT THESE WERE IN THE CONSTRUCTION OF YOUR HOME.

31. Which of the following best describes the experience of your household in house building prior to the construction of your current dwelling?
Never built anything but have done odd jobs 1
Never built or worked on a house previously but
    have built or worked on other structures such
    sheds or barns.......................................2
Helped friends or family with construction of a
    house previously.....................................3
Built a house previously.................................4

32. If you or your spouse worked on the construction of your house, how do you think that this has influenced your standards of maintenance and repair?

0. Didn't work on construction of our home...........0
1. lowered standards.................................1
2. no real difference................................2
3. increased standards somewhat......................3
4. Increased standards greatly.......................4
5. Prefer to hire people to do the work now..........5

33. If you or your spouse worked on the construction of your house, how do you think that this improved your ability to maintain your dwelling with your own labour?

0. Didn't work on construction of our home...........0
1. no real difference................................1
2. increased likelihood somewhat.....................2
3. Increased likelihood greatly......................3
4. Prefer to hire people to do the work now..........4

34. How would you rate the carpentry skills of the most qualified member of your household prior to and after construction of this dwelling?

	no skills at all		handyman				as good as many carpenters
prior to	1	2	3	4	5	6	7
following	1	2	3	4	5	6	7

35. How would you rate the electrical skills of the most qualified member of your household prior to and after construction of this dwelling?

	no skills at all		handyman				as good as many electricians
prior to	1	2	3	4	5	6	7
following	1	2	3	4	5	6	7

36. How would you rate the plumbing skills of the most qualified member of your household prior to and after construction of this dwelling?

	no skills at all		handyman				as good as many plumbers
prior to	1	2	3	4	5	6	7
following	1	2	3	4	5	6	7

37. How would you rate the construction management skills of the most qualified member of your household prior to and after construction of this dwelling?

	no skills at all			can manage small jobs			as good as many contractors
prior to	1	2	3	4	5	6	7
following	1	2	3	4	5	6	7

38. How would you rate the level of knowledge of how a house is built of the most qualified member of your household prior to and after construction of this dwelling?

	none at all			as good as the next person			as good as many contractors
prior to	1	2	3	4	5	6	7
following	1	2	3	4	5	6	7

39. How important do you think that your skills were in the construction of your dwelling?

	not at all			important			critically important
Carpentry Skills	1	2	3	4	5	6	7

	not at all			important			critically important
Electrical Skills	1	2	3	4	5	6	7

	not at all			important			critically important
Plumbing Skills	1	2	3	4	5	6	7

	not at all			important			critically important
Managerial Skills	1	2	3	4	5	6	7

40. How did you acquire the construction skills you used?

	Carpentry	Electrical	Plumbing	Management
Learned as we went	1	1	1	1
Took courses	2	2	2	2
Books/videos	3	3	3	3
Helping others	4	4	4	4
Work	5	5	5	5
Other (please specify)				
______________________	6	6	6	6
______________________	7	7	7	7

41. If training courses had been available in these construction skills would they have been of use to you and would you have taken them prior to building your house?

	Would have been useful		Would have taken them		Have taken them	
	Yes	No	Yes	No	Yes	No
Carpentry	1	2	1	2	1	2
Electrical	1	2	1	2	1	2
Plumbing	1	2	1	2	1	2
Construction management	1	2	1	2	1	2
Other (please specify) ____________	1	2	1	2	1	2

42. In retrospect, would you have taken a construction skills course? If you would have taken a course, how much would you have been willing to pay for each course?

Would not have taken a course.................1
Would have taken if it was free...............2
Would have been willing to pay up to $50.......3
Would have been willing to pay up to $100......4
Would have been willing to pay up to $250......5
Would have been willing to pay up to $500......5
Would have been willing to pay over $500.......6

43. How did you estimate the construction and related costs that you would incur until you were able to move into your dwelling?

____

____

____

____

WE WOULD STILL LIKE YOU TO LOOK BACK ON YOUR EXPERIENCE IN GETTING THIS HOUSE, AND CONSIDER WHAT PROBLEMS YOU FACED AND HOW ASSISTANCE MIGHT HAVE BEEN PROVIDED TO YOU.

44. Could you rank the following as areas where you encountered problems in getting this house. (Place the appropriate number in the box with a 1 for the area which was most problematic, a 2 for the second most problematic, and so on).

Permits and planning permission.................... ☐
Land purchase.. ☐
Surveying.. ☐
Selecting a house or house design.................. ☐
Finding contractors................................ ☐
Materials supply...................................... ☐
Getting enough time for the project............... ☐
Organising the construction....................... ☐
Financing.. ☐
Estimating the costs................................. ☐
Other (please specify)____________________....... ☐
None... ☐

45. For the areas which caused you the greatest problems, could you indicate how you now feel, looking back, you could have been better helped.

____
____
____
____

46. Could you rate your own performance with the following tasks? (You may not have undertaken some or many of these tasks in which case please circle 9 - 'not applicable'.)

	very badly			accep-table			perfect	N/A
Planning (including site locations and selection of a house design)	1	2	3	4	5	6	7	9
Estimating the costs of the dwelling	1	2	3	4	5	6	7	9
Management of contractors, sub-contractors, trades, and the help of family and friends	1	2	3	4	5	6	7	9
Co-ordination of materials, labour and other similar tasks	1	2	3	4	5	6	7	9
Working on the project ourselves	1	2	3	4	5	6	7	9
Managing family responsibilities	1	2	3	4	5	6	7	9
Getting things done on schedule	1	2	3	4	5	6	7	9
Other (please specify)________________	1	2	3	4	5	6	7	9

47. Which of the following construction tasks did you and your household undertake in the construction of your dwelling?

Purchased the land..............................1
Decided on the design of the house..............2
Obtained necessary permits and approvals........3
Hired and supervised sub-contractors............4
Purchased most of the materials.................5
Did a small amount of work......................6
Did more than a small amount of the work........7

48. If you were advising others now, would you recommend that they obtain a dwelling in the same fashion as you obtained this dwelling? Why or why not?

Yes......................1
No.......................2
Reason____
____
____

STILL DEALING WITH THE PERIOD WHEN YOUR HOUSE WAS BUILT WE WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE EFFECT ON HOW YOUR FAMILY ORGANISES DAILY TASKS.

49a. How long was the period between your decision to get a new home and when you actually moved in?

|__|__| months
|__|__| weeks

49b. Over this period, about what proportion of your time did you and your spouse spend getting into your new house?

Percentage of your time __________%
Percentage of your spouses time___________%

49c. We know that obtaining a house takes a considerable amount of time, and that for those who build their own house the time demands are great. Could you indicate whether the demands of getting a house caused your family to change how it dealt with households tasks, and what the current arrangements are.

	Who looks after these tasks?		
	Before building	During building	After building
Childcare	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9
Children's schooling	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9
Shopping	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9
Household finances	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9
Income taxes	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9
Assisting parents/children who do not live with you	1 2 3 4 5 9	1 2 3 4 5 9	1 2 3 4 5 9

WHO LOOKS AFTER TASKS?

1. Respondent totally
2. Respondent mainly
3. Shared about equally with spouse
4. Spouse mainly
5. Spouse totally
9. Not Applicable

FINALLY, WE NEED SOME BASIC INFORMATION ABOUT THE CHARACTERISTICS OF YOUR HOUSEHOLDS. AS WITH ALL OF THE PREVIOUS DATA GATHERED, THIS INFORMATION WILL BE KEPT STRICTLY CONFIDENTIAL AND WILL BE USED ONLY FOR STATISTICAL ANALYSIS.

50. Please identify the age, sex and relationship to you of each person who lives in this dwelling.

	Age		Relation To You			
		Sex	Spouse	Child	Parent	Other
Yourself	☐☐	M F	-	-	-	-
Person 2	☐☐	M F	1	2	3	4
Person 3	☐☐	M F	1	2	3	4
Person 4	☐☐	M F	1	2	3	4
Person 5	☐☐	M F	1	2	3	4
Person 6	☐☐	M F	1	2	3	4
Person 7	☐☐	M F	1	2	3	4
Person 8	☐☐	M F	1	2	3	4

51. Which of the following types best describes your household?

One Person, Living Alone.................................1
One Adult, With Children.................................2
A Married or Common-Law Couple, Without Children.........3
A Married or Common-Law Couple, With Children............4
Two or More Unrelated Persons............................5
Other (please specify)____________________________.......6

52. Does any member of this family have any physical disability that requires the use of special physical structures or facilities in or around this dwelling? (eg. accessibility to dwelling and major rooms by wheel chair, grab bar, kitchen modifications, electronic intercoms, etc.)

NO...1
YES, and changes to this dwelling would be desirable....2
YES, but the dwelling is well designed and
incorporates satisfactory features.................3

53. What is the highest level of formal education which you and your spouse (married or common-law) have achieved?

	You	Spouse
No Spouse..............................		0
Primary School.................	1	1
High School....................	2	2
Some Community College.........	3	3
Community College Graduate.....	4	4
Some University................	5	5
University Graduate............	6	6
Post Graduate..................	7	7

54. Which of these occupational groups comes closest to describing your current occupation (or former if retired) and that of your spouse?

	You	Spouse
No Spouse..............................		0
Farming, Fishing...............	1	1
Forestry or Other Resource.....	2	2
Labourer.......................	3	3
Skilled Construction Trade.....	4	4
Other Skilled Trade............	5	5
Sales, Service or Clerical.....	6	6
Professional...................	7	7
Managerial or Administrative...	8	8
Homemaker......................	9	9
Other (please specify)_________	10	10

55. Which of the following best describes the employment status of you and your spouse in 1989?

	You	Spouse
No Spouse		0
Self Employed	1	1
Full-Time Employee	2	2
Part-Time Employee (year round)	3	3
Seasonal	4	4
Unemployed	5	5
Full-Time Student	6	6
Retired	7	7
Other (please specify)___________	8	8

56. How many weeks do you and your spouse expect to work this year? (make your best estimate of how many weeks you expect to work for the rest of 1989)

	You	Spouse
Number of Weeks Worked	|__|__|	|__|__|

57. Do you have a mortgage on your dwelling?

Yes........................1

No.........................2

58. What is the approximate amount of the principal outstanding on the mortgage(s)?

Mortgage Principal..............$|__|__|__|,|__|__|__|.00

59. What is your regular mortgage payment, excluding property taxes?

Mortgage Payment $|__|__|,|__|__|__|.00

60. Do you owe any other money on your dwelling?

Yes, bank loan...........................1

Yes, Other (please specify)______________2

No.......................................3 (GO TO #63)

61. What is the approximate amount of the principal outstanding on these other commitments?

Outstanding Principal...............$|__|__|__|,|__|__|__|.00

62. What is your regular payment, excluding property taxes? (If no regular payment put $0.00 as payment).

Payment $|__|__|,|__|__|__|.00

63. What was the approximate cost for utilities (heat, light and water) **for your dwelling last year** (1988)? (Complete for either annual or average monthly).

Annual Costs $|__|__|,|__|__|__|.00 or

Average Monthly Costs $|__|__|,|__|__|__|.00

64. Which of the following best describes adjustments you have made to the original financing for your dwelling?

No Change...1
Original financing was insufficient and I had to
     obtain additional money to complete the house........2
Obtained additional money based on the security
     of the house for repairs or renovations..............3
Obtained additional money based on the security
     of the house for other purposes......................4
Made large payments to reduce original debt...............5
Made large payments to retire original debt...............6
Other (please specify)___________________________...........7

65. If you were to sell your dwelling now, for how much would you expect to sell it?

$|__|__|__|,|__|__|__|.00

66. Considering all sources, what was your approximate household income in 1988?

$|__|__|__|,|__|__|__|.00

BEFORE LEAVING, WOULD YOU MIND IF I LOOKED AT THE EXTERIOR FOUNDATION WALLS OF YOUR HOUSE AND TOOK A PICTURE OUTSIDE IN ORDER TO OBTAIN AN EVALUATION OF HOW THE DWELLING HAS STOOD UP.

Rate the ability of the following three components in terms of their structural soundness and ability to keep the weather out.

1 2 3 4 5 6 7 9

71. Exterior foundation walls in terms of crumbling, leaning, loose or missing material and cracks. |__|__|__|__|__|__|__|

72. General rating of the exterior walls above foundation in terms of tilting, missing materials, decay or rot, bulging and cracks. |__|__|__|__|__|__|__|

73. General rating of the surface of the exterior walls above foundation in terms of caulking, paint condition, cracks, loose or missing material. |__|__|__|__|__|__|__|

74. General rating of the condition of the exterior doors, frames, sills, trim and weatherstripping in terms of missing material, decay/rot, paint condition and fit. |__|__|__|__|__|__|__|

75. General rating of the condition of the exterior windows, frames, sashes, sills and weatherstripping in terms of missing material, decay/rot, paint condition and fit. |__|__|__|__|__|__|__|

Rate the ability of the following three components perform their structural functions.

67. Interior basement walls |__|__|__|__|__|__|__|
in terms of crumbling, cracks, missing materials, leaning, decay/rot.

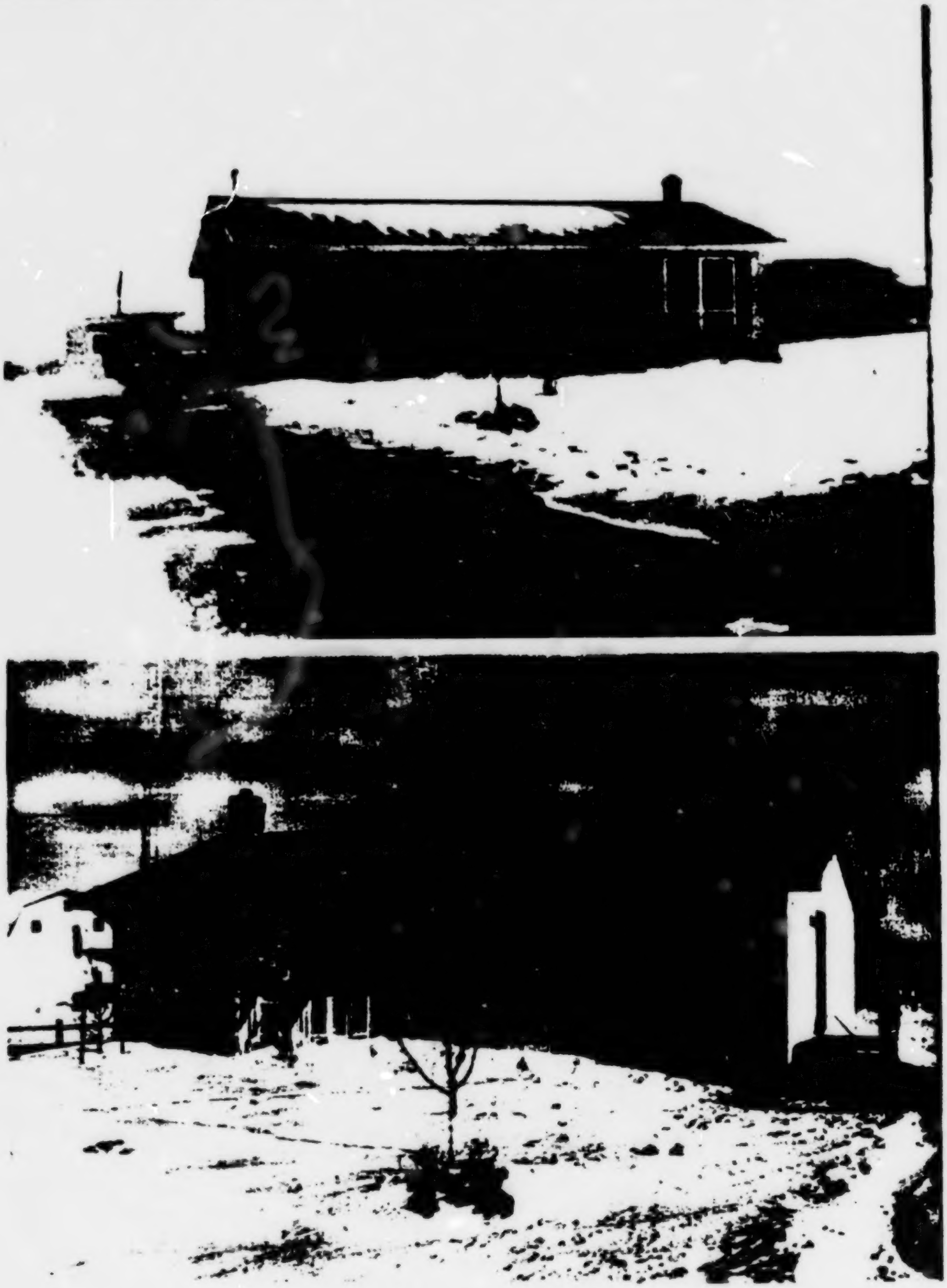
68. Support posts and centre columns |__|__|__|__|__|__|__|
in terms of leaning, crumbling, missing materials, decay/rot.

69. Joists and carrying beams |__|__|__|__|__|__|__|
in terms of sagging, cracks, missing materials, decay/rot.

70. Rate the evidence of water presence |__|__|__|__|__|__|__|
in the basement or crawl space in terms of water marks, mildew or standing water.

APPENDIX 2

PHOTOGRAPHS OF SELECTED DWELLINGS PRODUCED BY DIFFERENT PROVISIONING SECTORS

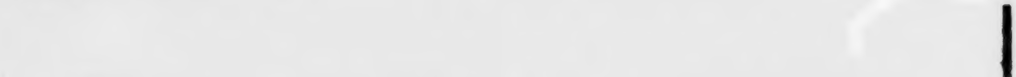


SELF-BUILD DWELLINGS

HOUSEHOLDS WITH NO PRIOR CONSTRUCTION EXPERIENCE

SELF-BUILD DWELLINGS

HOUSEHOLDS WITH NO PRIOR CONSTRUCTION EXPERIENCE



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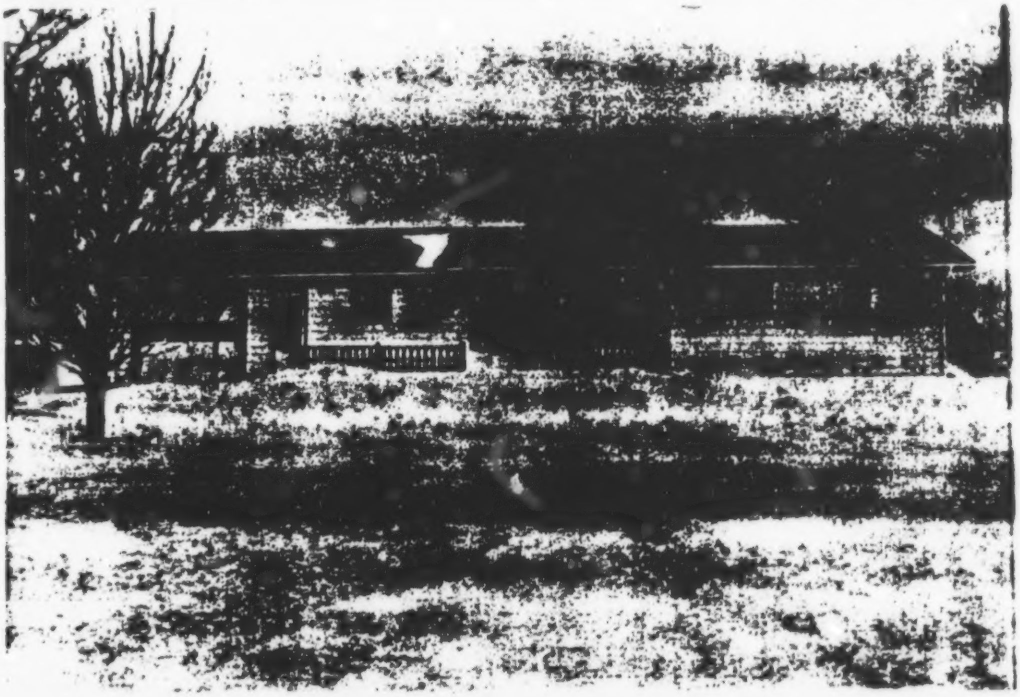
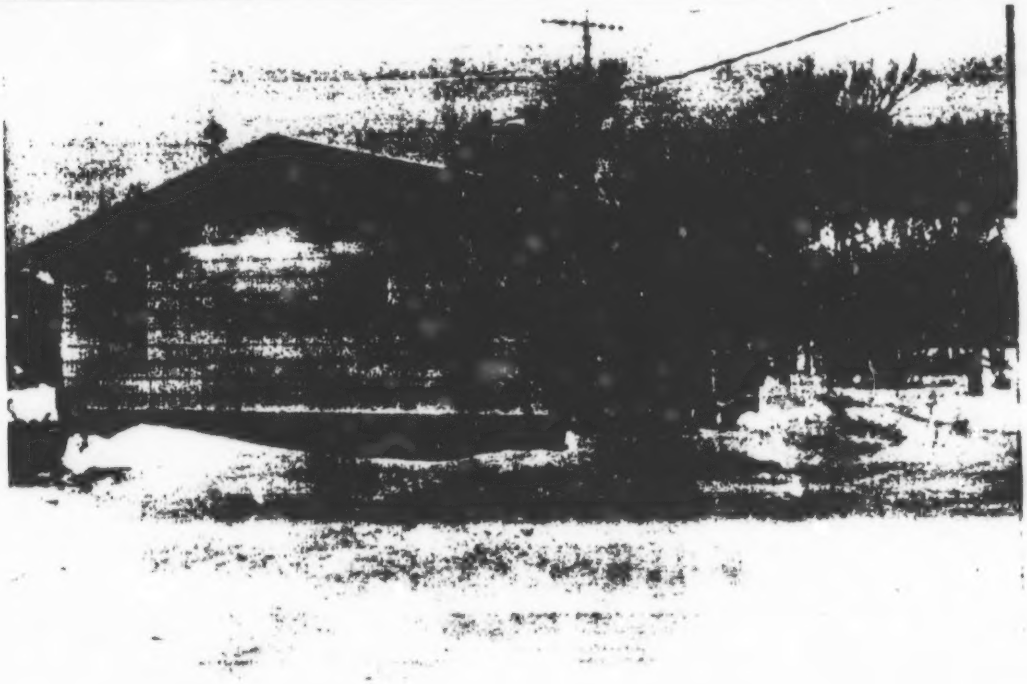


SELF-BUILD DWELLINGS

HOUSEHOLDS WITH PRIOR CONSTRUCTION EXPERIENCE

X



SELF-PROMOTED DWELLINGS

INDUSTRY PRODUCED DWELLINGS

INDUSTRY PRODUCED DWELLINGS